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ON display at Farnborough International '80 air display is the Marconi Radar universal console as proposed for the Ministry of Defence UKADDE, UK Air Defence Ground Environment project. The console is based on Marconi's innovative Locus 16 modular computer system, which pioneered the use of dispersed processing elements throughout a system. Marconi is part of the UKSL consortium which also includes Plessey and Hughes of the US. Hughes is bidding its 8118 16-bit military minicomputer for the contract, which is expected to be placed this week.

It's all change for Prestel exports

AREGON's Prestel licence agreements with its major US customer, GTE, and with British Telecom, have been renegotiated — but this time on a non-exclusive basis.

This means that GTE can now investigate other systems. Aregon can sell other potential US public service providers and British Telecom can also sell directly to the US market and may set up a North American office.

The feeling within British Telecom is that the previously exclusive agreements had put the UK at a disadvantage in the face of the French and Canadian efforts.

The Department of Industry is also understood to be organising a joint approach to exporting Prestel and UK versions of teletext.

A separate agreement has been reached in principle for a team effort to sell GEC-based Prestel to PTTs worldwide, with the Prestel organisation supplying the software, GEC supplying the computers and Aregon providing support and consultancy. The range of services offered would be broadened to include education and project management, such as running trials.

Development

Asked if Aregon's reports on viewdata technology might not be biased, managing director John Pearce said: "Either you know a lot about something and you are biased, or else you know nothing and you are impartial."

Commenting on the slow development of viewdata in the US, Pearce said that despite much talk last year about

forthcoming trials this year there had only been one other besides the GTE/Aregon corporate-user trial based in Tampa, Florida: The one AT&T was running with newspaper publisher Knight-Ridder in Miami, operating under the name Viewdata Corporation of America (CW, September 1979).

GTE's trial had shown up three main types of partake: Potential information providers, public service operators and individual users.

Argot was now free to support would-be public service operators and as more Knight-Ridder-like trials started up over the next few years, Aregon aimed to be supporting as many of them as it could.

The Intra, private system market had been slow firstly because of the recession and secondly because nearly all potential buyers went for specialised turnkey systems rather than the standard product Aregon had originally hoped to sell.

Doultish is not revealing details of how the syntax programming works, but he points out that the system weighs different features of the properties and puts in more or fewer of them according to the space available.

It also makes some choices of words at random along the way, so the same specifications will not produce the same text twice. Thus customers who do not like an ad can run the program again until they get one they prefer.

NCR's remaining light-handed about why it wants ADDS, although the company is still primarily a VDU maker, it is diversifying into the micro business systems market and at the end of the year is due to launch a new product built around the Zilog Z8000 16-bit micro running a version of the Pick Reality operating system (Software File, August 26). Although this machine would add a substantial amount to the market share of NCR's 8100 and 8200 series, there should not be a serious conflict since NCR sells to end users whereas the ADDS systems would go through OEM systems builders.

Emphasised

The "psychographic characteristics" of different groups of people in the market are also built into the system so that the features each group is interested in can be emphasised if need be. The software runs on GEC's Mark III time sharing service so end users anywhere in the country can feed in their ads

running a version of the Pick Reality operating system (Software File, August 26). Although this machine would add a substantial amount to the market share of NCR's 8100 and 8200 series, there should not be a serious conflict since NCR sells to end users whereas the ADDS systems would go through OEM systems builders.

East Germany catches up

■ From front page

translation. Thus the instruction stream is divided into two and three processing units (two 16-bit units for the microprocessor, instruction and data processing and a second 16-bit unit for the address translation). Then the

separate memory management unit which allows up to 128K words of main memory to be addressed.

Using the data arithmetic coprocessor, the unit can do fixed point 16- and 32-bit arithmetic and floating point arithmetic on 32- and 64-bit words.

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<b

Downtime

by Chad



"...and if your account's in the red, it shifts into a minor key."

GILB'S MYTHODOLOGY

Simplification – one of the most powerful aids you can use

HOW much will it cost? When will it be finished? How many programmers will you need? Will it ever work?

These are our daily food – and, too often, we need to simplify our diet to prevent indigestion. But we continue to eat traditional meat, and the belly-aches are a foregone conclusion.

Is there a textbook on "How to simplify"? A course on it? Or, even more to the point, a course on applied simplification for data processing problems? I don't know about them if they do exist – and specifically I have been unable to find the concept of simplification discussed in computer literature.

Dramatic

I find, however, in my consulting work, that simplifying a problem, before "solving" it, is one of the most dramatic and powerful things I can do. Simplification is initially an intuitive reaction on my part. I simply cannot waste my time on frustratingly complex problems, when I can simplify the nature of the problem by applying a little imagination.

About five years ago, I made some notes on principles of simplification for data processing projects. They have found their way into the manuscript of my next book, Computerware. Tochioscopes, and I would like to share them with the readers of this column.

At the risk of allowing the reader to misunderstand the principles for a few weeks, I shall summarise some of them, in this column, and treat them in more depth in succeeding columns.

In the meantime, I encourage the

reader to take his most pressing and difficult problem and see if he can simplify it dramatically, using these principles, or his own principles, (which he is asked to share with readers by means of a letter).

Principles

1. Include simplification ideas as high priority goal statements.
2. There is always a simpler way. Keep on looking for it.
3. If you can't find a simple enough alternative, then try looking at an entirely different set of alternatives.
4. Identify your highest-level, that is, fundamental, goals, clearly. This will enlarge the set of possible solutions for you, and help you find a simpler solution.
5. Divide your solution into two or more different solutions. Sometimes, "many simple solutions" is simpler than one complex one.
6. Change the problem formulation point of view so that it still satisfies the problem originator, but so that you get more freedom to select a simpler solution.
7. The "Blue Sky" principle. Dare to dream the simplest and most direct approach to the problem. Then work your way slowly down to the first practical step below this ambition level. This is likely to be a higher level of simplification than a bottom-up approach.
8. Open the design process to competition, and select the simplified solution as one of the winning solutions.

A series of simple designs for processing a complex stream of problems will tend to be simpler than an integrated design.

10. Automate, make system components simple for people by transferring complex design to computers. For those who think this is preaching to the converted, we constantly argue against this principle in code design, form design and work-procedure design.

11. Make a SIRIUS/ADJUSTING system. Design the system so that it collects data on activity during operation, and can make use of this data to alter its own action. (We are not talking about artificial intelligence here, but about simple things like system-wide resources being used to optimise resource use).

'Tell me all about computers!'

A COMPUTING academic of my acquaintance was moaning to me the other day about a certain type of letter he is constantly getting from students. It goes along these lines: "I am writing a thesis on microprocessors. Please can you tell me all you know about them?"

We get a number of these letters at CW too, asking, "Please explain silicon chips to me," or more often we get phone calls from somebody's secretary inquiring, "What will be the worldwide market for printers in 1985?"

We even had one caller who said, "Can you give us the name of a computer company? We are an advertising agency and we want to take them on as our clients."

My academic friend points out that what his student correspondent means, of course, is "Please will you write my thesis for me?" Certainly this phenomenon is not new, nor is it confined to the subject of computers. I once heard similar moans from an American who lectured at the venerable institution that was once attended by Henry

Wadsworth Longfellow. All year long would come a stream of letters from high-school students around the country asking, "Please could you send me all the papers and documents you have relating to Mr Longfellow?"

Occasionally letters would arrive addressed to Mr Longfellow himself, despite the fact that the poor fellow died in 1882. The lecturer spouted his venom not at the kids but at their teachers, who should have been getting them to read the man's poems instead of writing biographies, he thundered, adding that seodng

the kids away to do little projects was often an easy cop-out for teachers.

I'm sure there is much truth in that last point, but there is one project that could be both instructive and entertaining for some kids, and I have been wanting to suggest it to teachers for a little while. This is a definitive and comprehensive study of one-man bands.

Think of all the different headings that are waiting to be covered in the report: Technology; Artistic considerations, including repertoire (how much

is this limited by technique? Financial aspects; Stuff about the Unsocial Function?); Meteorological observations; History; The Future; for applying microphones. Photographs could be easily included. The whole report just waiting for some kid to dispatch it to Leicestershire on a Friday night, and I am sure notebooks and Instamatic cameras would be a chance for them to feel they were pushing the frontiers of knowledge.

Well, leaning on them.

Looping the reference loop

care to cite all your earlier papers.

Despite all this, some researchers swear by SCI and say this list of who is quoting whom is the best way to retrieve information from the ever-expanding torrent of scientific literature.

I mention this because of an interesting article in the latest number of the Communications of the ACM. Called On Folk

Theorems, this is an clever intellectual joke which attempts to explain, by Devil's own IBM's Watson Research Center (yes, IBM does have a sense of humour).

The notable thing about this paper is that it includes a reference to itself. I am waiting eagerly to see whether SCI can blow up or get into a permanent loop as a result.

FOCUS

Keeping up with the conferences



Tom Gilb is an independent consultant, lecturer and author on computing topics.

rules to your current problems, and that your own present ability and imagination, triggered by these simplification principles, will produce a simpler solution than you had before you read this column.

Perhaps some creative reader can simplify this collection of simplification principles.

TEN YEARS AGO

From Computer Weekly of September 10, 1970.

£9,240,000... The Strip Mills Division of the British Steel Corp updated its computer power by ordering three IBM 380/80s and a 380/40, together worth £2 million. Rank Xerox planned to set up a product development laboratory in the UK. Business Computers Limited acquired an interest of 49.9 per cent in Addo-X Canada. An ICI system 470, with a 200K-byte capacity, was bought by the Hungarian Economic Planning Office, for £700,000.

CONFERENCES

MICROPROCESSOR Applications in Manufacturing Technology

A conference to be held in November.

Organised by the Institute of Information Scientists.

It will be held in Manchester from November 6-7. There will be an exhibition on the second day of the conference.

Day one will include a review of the present capabilities of minis, micros and terminals.

Further information can be obtained from BMSI, 11 Birdcage Walk, London SW1.

01-832 2222/2223.

The Federal Office Automation Conference takes place in Wiesbaden, FRG, from November 2-4. It is designed to bring together people from all levels of involvement in federal government office automation. The main conference programme will include discussions on the use of the microcomputer in office automation and the Federal Office Institute. For further information, write to Federal Office Automation Conference, PO Box 10778, Wiesbaden, FRG, 6500, or call 061-94 54 54 11.

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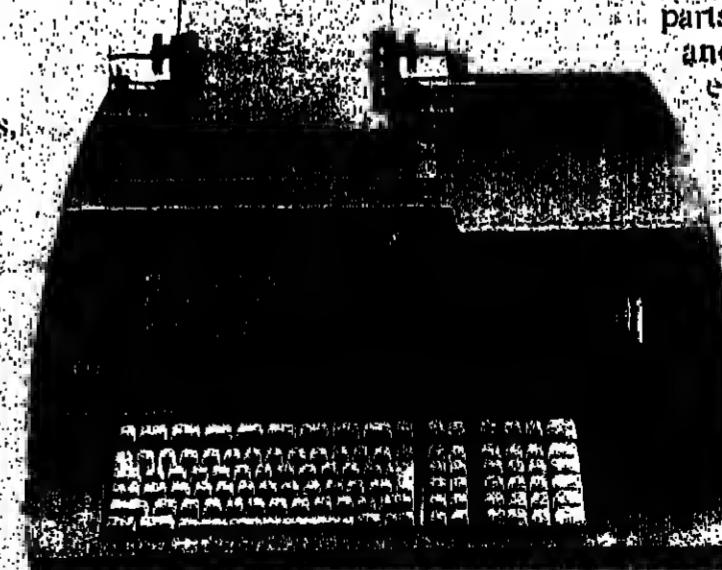
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PAGE SIX

for programmers
and analysts

by Pamela Rowe

"MINE'S a pint, Terry," someone called. He mumbled over his list — four bitters, one a shandy; vodka 'n' tonic, half of cider, whisky mac and two Cinzano lemonades. We dispatched him to the bar and got our heads down over our favourite pub table to chew the latest redundancy rumour.

This topic had kept us going over many a Friday leaving boozing up since the day in June when suddenly the rest of the computer department started slipping into the Programming Room. Mysteriously, we programmers had put aside our coding pads, and soon afterwards the managing director, John Holman, made his entrance.

Silence

In slightly threbbing tones he told us that McCordqudale Books Computer Centre was closing down and that most of us would be made redundant at the end of August. The main effect of this was a deep silence, but after J.H. had left conversation picked up and we soon found ourselves all gathered round the electric kettle and tea-bags.

So, after just over one year in computing, here I was sitting in the pub facing my first redundancy. I had wondered into computing in the circular way that is so common. Initially I had trained in photography and included a stay among the exhibits of the British Museum, before specialising in film. Thereafter I worked in the film-editing departments of Canadian Broadcasting in Toronto, and the Reeb in London. I left with some qualms to become a commissioned Photographic Officer in the WRAP. This proved to have a life-style I had only read about. My batman woke me with coffee in the morning, cleaned my room and looked after my uniform.

It must have been a reaction against all this comfort that made

The ins — and outs — of a job in programming

me, after completing my commission, become a full-time student at university.

This was very different. I found it a life of chaos, with every minute spoken for twice over, continual deadlines, and a looming pile of work I could never gain upon. I spent most weekends chained to my desk or fretting guiltily when I fumbled. And so did everyone else — where were the layout, parasitic students we all know are so prevalent? Not at my university.

Gratefully, I grasped the out-stretched branch of a permanent, full-time job. Along with my main subject at university, I had studied some ancillary courses in computing. I enjoyed these, and they stood me in good stead when I applied for a job as a novice computer programmer with McCordqudale Books of Colchester.

With the other 11 applicants of my batch I filed into the boardroom, and hung on doggedly through an hour of flowerhanging problems. I subsequently learned that I had scored top marks and was offered the job.

Reality

As a trainee I wasn't much use until I had been on the ICL Basic Cobol course, held at Manchester. I spent three very happy weeks combating the intricacies of Cobol. It is a well presented course and quite demanding, involving some evening work — out of all of which is done in the bar.

People come into programming in many different ways. Here our new Page Six editor introduces herself with a striking account of her entry into — and exit from — one job which gave her a deeper insight into the concerns of all who read this page.

After three weeks of Manchester sunshiny, I returned to the sharper winds of East Coast reality. The moment had arrived to write my first Cobol program — Gilt, GL for general ledger, I for input, and T because it follows S. With the aid of a number of questions and a few hiccups, all were reasonably well.

My course knowledge actually worked and eventually I had produced a pile of coding sheets, 50 pages thick, closely inscribed, to present to the dismayed punch girls. Later I learned that 100 pages, nicely spaced, was more gladly received.

We were encouraged to flowchart in detail, desk-checking the logic before ever starting the coding. This suited my way of working and eventually became the part I enjoyed the most — the creative satisfaction of puzzle solving.

All four of us programmers wrote to a formidable set of standards compiled by Ken, the senior programmer. Once past the bulk, though, they did make a lot of sense. Data-name suffixes for example — DI for disc input, DO for disc output, WW for those in

working storage areas, made for much easier comprehension of others' programs and for amendment.

All our applications were commercial: payroll, general ledger, pension, financial plan, etc. The computer centre was a small configuration of an ICL 2903, three EDS, and one PEDS, serving the needs of the parent and affiliated companies.

Optimism

The compactness made it easier to have a hand in more files. We allocated our own space on disc, wrote our own test data, tested the program — sometimes the whole suite — and copied them to the requisite master, culminating in production of operating instructions and a macro to run the string.

I SHOULD like to respond to your Page Six feature (CW, August 21) on moonlighting.

Firstly, as an employer, in the early 1960s my company used to consider applications from would-be moonlighters to work for us on a part-time freelance basis. Applications were, however, only processed when the current employer's permission had been received in writing. Significantly, but not surprisingly, most candidates withdrew their applications. Some, however, had apparently sound reasons for wishing to moonlight in the industry and did indeed receive their employer's go-ahead. Of these we accepted some applicants after the usual selection procedures; only a very few of those accepted proved professional in their job, reliable, able to keep their two jobs separate. Most were advised at the end of their first assignment with us that we should not require their services any further. Many were paid off and taken off our work long before the end of the assignment.

For 15 years now we have not even considered applications from moonlighters and our application form is specifically designed to tag on a full-time basis is not

Before I joined McCordqudale in June, last year, the three programmers and one analyst shared a room. Then the department expanded to include me, two more analysts by August, and a third, coinciding with a move to a separate analysts' room, in September.

This mood of optimism continued with the company's decision to order a new, bigger computer — the 2905, and occasioned intermittent pep-talks from our DP manager, John King. He told us that our futures were bright, settled and clear, and not to expect any clouds.

It wasn't long after that before the 2905 was postponed, and Harry the Ops manager began to shake his head. We brightened up when the planned changes to the computer room were carried through, but Harry was never convinced. Even so it still came as a shock that day in June when redundancy was at last given a date.

So there we were, those that had remained to the end, at the Last Booze-up.

Another of those moments has now arrived — I am hanging up



Pamela Rowe

my flowchart template, hanging on to my pencil, and my new typewriter. Not an leaving programming, but my involvement will be wider from a different angle.

My aim is to discuss the way we're all really interested in the exception of Miss Vass and the dog's problems. So, in time-honoured fashion, I am leaving you all out there to tell us who shot JR, but who still not shooting (and why) what is mystifies you; what it's like to work; and simply what you would like to talk about. I shall be picking on topics as aptitude tests — it's luck which one you get. For unions in computing, in structured programming and sectionalisations.

SO often are the terms "flexible" and "user friendly" used to describe software products that people are wary of them. But a package from Henco of Wellesley, Massachusetts, not only fulfills the promise but is proof of the power that a relational database can provide.

The package, Info, is used in the US on mainframes to form a bridge between file management and word processing applications, allowing them to play with the inter-relations of up to 10 files at a time.

Implemented on a smaller machine, the package provides many powerful tools to the user — a development language for applications, query facilities, report generation and the ability to create files which can be accessed by other programs, systems and programming languages. It is also said to work with existing files.

"IBM can't sell you the best programming language for the 4300 series. At any price" say Henco's advertisements in the US. The aggressive marketing line is based on confidence in a product which has been developed over the last eight years to cope with a whole range of tasks.

The datafile-name is any in the user's dictionary, and the relationship — a number between one and nine which is used as a reference number for subsequent access of fields in the specified datafile.

The item-name is a field which appears in both the named file and the currently selected/previouly related file.

The options allow the results of the RELATE exercise to be manipulated; for instance APPEND adds a new record to the related file with the value of the common

APPEND
FILL
INIT
ORDERED
TABLE
SUMMARY

Figure 1.

FBA emulation on your CKD devices

VFBA

VFBA gives support for virtual FBA disks on normal CKD devices. VFBA reduces CKD overheads to that of normal FBA devices.

VFBA runs under VMS, but does not modify VSE, AFS or CMS.

VFBA uses removable FBA files.

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Tel. 01-861 6116 Telex 881374 WEMSSA G

SOFTWARE FILE

Flexible bridge for files and WP

```
*****  
01. PRINTL CUSTCODE CUSTNAME WHERE CUSTBAL IS NOTEQUAL TO 0  
02. AND CUSTTYPE EQUALS "S"  
03. STATRNO STATDATE STATREF STATAMT STATVMT STATCMNT CHTR  
04. TOTAL STATAMT STATVMT STATVMT STATAMT CHTR FOR CUSTCAT CUSTCODE FOR RUN  
05. SORT BY CUSTCAT CUSTCODE
```

Our picture shows Dataplan sentences on a video terminal. These produce a report.

'Program in two minutes' is claimed for dictionary

THE secret behind Dataplan, the program generator for Data General's general business Basic. Using the printer or Univac V77.

The product is already available in the UK through Doric Computer Systems, of Watford, which obtained the licence from Henco earlier this year. (CW January 31).

Hands-on

A hands-on test of Info at Prime's headquarters in Hounslow revealed that, even on a small machine, its range of facilities is impressive.

Info is fast catching on in the US, with over 260 customers. Licence fees vary from \$4,220 for Honeywell Level 6 to £12,000 for IBM and PCMs running under VMS.

An enhanced version of Pascal has just been released by Prime Computer for use on the general purpose Series 50 systems. It meets ANSI draft standards and is said to offer additional features.

The reports are created via English language sentences which generate programs in structured business Basic. Using the printer or Unicomp's special dictionary.

The suite consists of dictionary maintenance, dictionary listing and summary, sentence compiler and print interpreter. The dictionary allows ownership of fields and files to be defined with no restriction on the number of levels. A file may have any number of indexes.

Computerplan claims the tool allows design and programming phases to be merged into one. The dictionary allows ownership of fields and files to be defined with no restriction on the number of levels. A file may have any number of indexes.

Computerplan uses the system in-house and although it is not yet officially launched it is in use at clients' sites.

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OP SPOT

A career path and training still major issues

ALMOST three years ago to the day with a feeling of great anticipation and a little uncertainty I took over a column called *Op Spot* — the operators' only corner in the computer trade Press.

And it is with an unusual mixture of relief and regret that I put my name in the *Op Spot* page for the last time.

Three years is quite a long time out of anyone's career, so I would like to take this opportunity to reflect on some of the subject matter we have looked at on this page.

Career progression was an area of much heated debate — a fact which reflects the difficulties operations staff face as they try to capitalise on their skills and experience.

Many correspondents said that their site provided no career path for the operations staff. They pointed out that it was relatively easy to get to the position of senior operator but that further progress was extremely difficult.

Professional

Some contended that operators should be encouraged to move into application programming, while others argued that their hard-won skills would be better employed in such fields as technical support, operations support, systems pro-

gramming, TP network, training, and supervisory and managerial positions.

It is important to bear in mind that few correspondents viewed life in the busy and sometimes hectic operations department as "just a job". The vast majority stressed that took their work seriously and adopted a professional approach.

Closely related to career progression is the matter of operator training and many of you complained about the scant attention paid to this at the typical installation.

In my view operators should be sent on courses to supplement their practical, hands-on training. Such courses, it must be remembered, should be attended at the right stage of the operator's development.

Shift work

Shift work was discussed at some length over a number of weeks. Several of you said that it is detrimental to health and has a disruptive effect on the operator's home and social lives.

By contrast, several operators said that they actually enjoyed working days, evenings and nights and that the nine to five routine just wasn't for them.

All I can say is that I have worked a two-shift, eight-hour

pattern, which was fine, and the 12-hour shift rota, which I found very tiring.

The shift allowance came in for considerable criticism as a means of compensating the operator for working irregular hours. The consensus was that the general level of shift allowance just wasn't high enough.

Some pointed out that the shift allowance acts as a barrier to career progression: the operators come to depend on it and are therefore reluctant to give it up in order to move on to days only position.

Allowance

An interesting suggestion was that the allowance should be phased out in the event of an operator moving out of the department. This, it was pointed out, would help the operator adjust to the drop in income.

As I see it, one of the biggest drawbacks of the shift allowance is that non-operations staff both inside and outside the industry tend to view it as a bit of a perk.

That view is reflected in the attitude of staff associations when bargaining on behalf of the operator. As a result the operators don't get the level of compensation they deserve.



by Bernard Allen

How Univac tries to tailor courses to fit students

OPERATORS sometimes go on courses and come back complaining that the ground covered didn't really meet their needs.

Typically they will say that the course had parts which did not apply to their installation or that the level of material was either too basic or too technical.

The operators still get a centre travel all over Europe, the US, providing travel support and operator training.

Particularly impressive is the computer aided instruction packages which the user may buy from Univac for about £1000.

The OS3 CAI package, for instance, runs on the machine and the operator is guided in his own work goes through the various stages of processing.

What I like about the package is that it is interactive, and enables the operator to get accustomed to the machine as he learns how to use the operating system itself.

Budgeting

Alan Stevens, education manager for customer and services support at Univac's Birmingham training centre, told me: "We do general courses such as introduction to DP, systems and operations management as well as those relating to a particular machine or service."

"The operations management course covers such topics as organising, budgeting and planning."

The theoretical, classroom type courses are held both at the centre and on user premises.

They are scheduled at the centre in accordance with current requirements and include operations staff from different installations. On-site courses tend to be reserved for the larger user and have the additional advantage of being tailored to his particular system.

Vital

Steveos went on: "Our 1100 Series operator course covers matters such as the executive, job control, and hardware and software. It seems to go down well with the people who attend."

It is vital that classroom courses

Taking the helm

PAUL FISHER (right) is taking over *Op Spot* from Bernard Allen. Before joining Computer Weekly he worked for magazine Systems International writing about micros and peripherals. He looks forward to churning out anything that's fit to print about the weird world of computer operators and promises to answer all correspondence individually.

Ops management is a demanding job

OPERATIONS managers have come in for a fair share of criticism in this column during the past three years, so I can't go without saying something to them.

My advice to the operations manager is: Look after the interests of your staff and most will respond in a positive manner.

Send the operators on appropriate courses and you will keep them interested in the work as well as adding to their already considerable technical expertise.

Ask for their views: imaginative operators

often come up with ideas about the running and phasing of the installation. The problem is that few people take them seriously.

Give your staff responsibility and let them take on their own challenges.

Treat the operators with respect and your job much easier and ensure a smooth and efficient installation.

Group needed to fight for your status and respect

THE odd thing about operations staff is that they don't band together and have no organisation to voice their opinions after their installation has been completed.

After four years of negotiations, the group of managers working with and around the Computer Weekly on the communications environment, has finally got together.

Unfortunately, Opcom told the magazine that the group's members were full of enthusiasm and a holding company was established to represent the group's interests. Opcom did not

try to do something.

Some sort of group could be formed to improve the status of operations staff, if it could establish standards of training and career development.

But unfortunately, the group of managers is not very large and an organisation is not the best way to increase the level of respect and recognition of operations staff.

Opcom did not

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PEOPLE and EVENTS

"Clipper" sails into computer age

"CLIPPER", a contender in the Americas Cup international sailing event, will be making use of the latest computer technology.

A computer system that allows instant analysis of the day's racing and a system that "talks" to the navigator during the race, has been developed by Dick McCurdy. The talking computer results from the addition of a speech synthesiser to the on-board computer, allowing verbal information to be given to "Clipper" navigator Tom O'Brien.

The system uses two Data General computers, one on-board and one on-shore.

McCurdy introduced small computers into the Americas Cup in 1974.

New consultancy

SHEILA FOX and Phil Shipton are the co-founders of Link Associates, an independent consultancy service with an emphasis on the City institutions.

Shipton has been in the computer industry for 11 years, in both hardware and software. Fox has spent nine years in recruitment agencies, the last two years as recruitment consultant with Computer Agency.



McCurdy

Development and refinement of the new system is still going on.

"Finding out how to separate the most useful data and deciding how to use it is our biggest challenge," commented McCurdy.

Information gathered on board includes boat speed, apparent wind angle

(the actual wind angle and the effect of the boat's motion), apparent wind speed and rudder position.

The technical team working with McCurdy includes Tom Johnson, a Data General systems engineer from Long Island, Dave Pedrick, a yacht designer and Sheila McCurdy.

Home Counties Pearson previously worked as systems and programming divisional manager for another recruitment consultancy.

John Girdley has been appointed manager, communications and software products, for Memorex International. He will be responsible for marketing and sales support of communications and software products for the 21 countries in the International group.

Jaime Gorman has been appointed chess player sponsored by Computer Weekly, has one more tournament before the end of his school holiday.

He will take part in the Lewisham Open on September 12, playing people graded below 200. Jaime is graded 145.

This has been a busy summer for Jaime. He took part in the London Evening Standard tournament, the Lloyd's Bank Junior tournament and the British Open at Brighton.

Jaime, who is self-taught, has been

playing chess for four years. He practices his game for 1½ hours a night.

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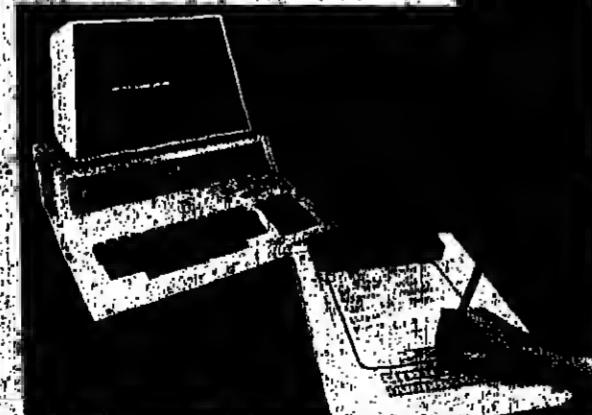
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MICRO NEWS

Sinclair launches the Super ZX80

CLIVE SINCLAIR launched his "Super" ZX80, last week, with the introduction of an 8K Basic ROM chip and a 16K RAM package. He also announced that the US company Image Producers would be supplying standard software packages for both versions to the UK and Europe.

"With 16K of RAM and the 8K Basic ROM," he said, "the ZX80 will rank well above equivalent memory-size versions of the Pet, Tandy and Apple systems." Sinclair uses his own Basic rather than the more commonly used Microsoft Basic, which he claims is not the best version.

Graphics

The 8K Basic ROM chip, which directly replaces the 4K ROM original, will enable the ZX80 to work in floating point arithmetic to a 9-digit accuracy. It will also do

log and trig functions and their inverses. But unfortunately there is no upwards compatibility between the two slightly different Basic's.

The ROM will also extend and improve the graphics facilities of the ZX80, and add 37 new functions for which Sinclair supplies an overlay template and a supplementary operating manual. Additional features will include graph plotting, execution of scientific functions, a "pause" function to permit animated displays, a set of string handling facilities, arrays and cassette load and save facilities.

Replacing the current 3K-bytes of memory expansion boards, the 16K-byte RAM package can be attached to the rear of the ZX80 via an edge connector, and supplements the system's integral 1K-byte of RAM.

Both additions, the 8K ROM at £19.95, and the 16K RAM at

£49.95 (inclusive of VAT) bring the price of a ZX80 system up from £100 to £170 plus the cost of a cassette, say around £20. Sinclair considers it still a better buy than an Acorn Atom or a Nebury Laboratories' Newbrain.

Twice as fast

However, the Newbrain model MB, which costs £195, can operate from mains or battery, has battery-backed RAM, 16K of dynamic RAM and is claimed to be twice as fast as the Pet. It uses a dual processor CPU; a Z80 to process, and a National Semiconductor NMOS microcontroller, the COP420, which controls the display, keyboard and peripheral drive interfaces. It also has eight I/O ports - the ZX80 has none.

Sinclair says 17,000 units have been sold since the launch in February and they are currently being manufactured at a rate of 500 per

month. He also said that an I/O port has been designed for the ZX80 in the US, an RS232C interface, but that now is not the right time to introduce it on to the market.

The same about a plug-in keyboard. The ZX80s are still manufactured on a subcontract basis by an electronics company in Cambridge. Sinclair claims a testable 1% failure rate to the field, with a four-week delivery time (though this was up to nine weeks at one point).

A surprising announcement by Sinclair was that he is planning to enter the field of "Telecommunications" with the ZX80 sometime next year. This means that power using the Sinclair version of the Z80 could be transmitted via the telephone system.

He has already had talks with one television company that broadcasting software, and considers that his Basic could become a standard rather than the more widely used Microsoft Basic. However, the revenue would come from advertising transmitted via the software.

Software

Like the US office, Sinclair Research in the UK has decided to take on Image Producers to supply software for both the 4K and 8K ROM versions. The company will be issuing a catalogue in the autumn, which will categorise the products into two sections.

The first section is to contain 10 business and scientific programs, initially for the 4K version, and the second section will contain entertainment programs. Image Producers is currently developing a "Computer learning lab" software package, aimed to introduce novices to computing at an elementary level.

No further memory expansion is planned by Sinclair at the moment, "but we will do it if there is the demand," he said. He also said

Games boom is unlikely

THE expected boom in sales of electronics games this Christmas is not likely to happen, as securities analysts in New York believe. Predicting slightly revised figures for this year, with Christmas only slightly better than the 1979 figure of \$320 million.

Reasons given for the drop in sales are the onset of steel saturation and the overall economic slowdown. According to one analyst, market saturation will also cause a shakeout of smaller suppliers.

Retail sales are thought to be down by about 10% this year, while manufacturers' shipments are up by 20%. This will cause the larger sellers to attract most of the sales away from the smaller suppliers to lower their prices.

Reciprocal agreement

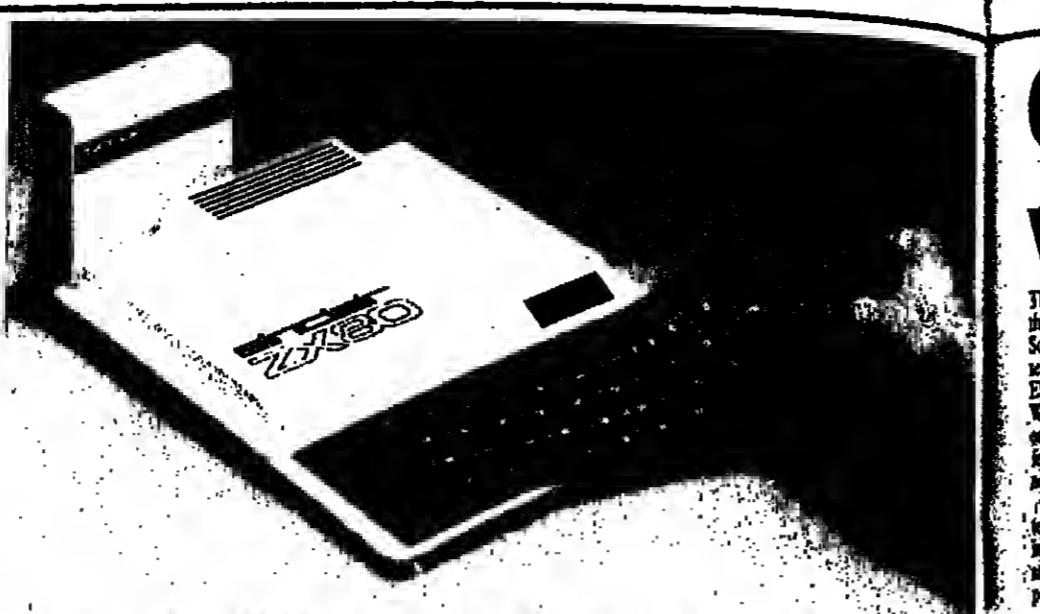
IN a cross-licensing agreement Syntek, a wholly-owned subsidiary of Honeywell, is to second-source the S68045 controller chip from AMI, which is to second-source Syntek's SY6551 UART. Samples are expected from both companies during the first quarter of 1981.

The S68045 is a plug-compatible version of the Motorola/Mitsubishi 6845, and is used mostly in high-volume, low-cost terminals. The SY6551 asynchronous communication interface adapter features an on-chip baud rate generator and is used to provide interfacing between 6500/6800 family microprocessor chips and serial communication data sets and modems.

An upgrade package, called Model 516, which will convert any existing Intel development system to a Series III will also be available for \$7,500. However, the Series III will be compatible with existing systems, and offer multi-user support.

The two host CPUs will provide a dual execution environment to allow users to run 8- or 16-bit applications and a 16-bit resident in the 8085 or the 16785, respectively.

The company has also



A keyboard template is supplied with the "drop-in" 8K Basic ROM chip for ZX80.

Electronics centre

A MICROELECTRONICS centre offering computer-aided design and integrated circuit design services is to be created by United Technologies in the US and a new Mostek plant, which is currently under construction in radio Springs.

Gordon Hoffman, managing director of business and technical development with UTC Microelectronics, is to become general manager of the centre. The centre will be available to all UTC units when the centre is completed next year.

Two seminars aimed at users, engineers and managers of Z8000 family and related products are being organised by October in Manchester and

Model 290 disc file sharing system, will be available in the US in December for \$25,105. The compiler will be available in the US in December for \$4,000.

Among its multimodule boards, Intel has begun marketing its iS8X 331 fixed-point point Maths board, which will be available in the US for \$450. The module operates at 4 MHz with an on-board crystal clock speeding up arithmetic by over 20 times, claims the company.

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DONALD KENNEDY OBSERVES...

Leet month saw the demise of a pair of English Electric KDF9s at the National Physical Laboratory in Teddington, West London (CW, September 4), one of which had been installed for over 15 years.

The occasion was marked by a farewell gathering at which former users, operators, systems programmers and engineers were invited to join those still at NPL in paying their last respects.

Tom Vickers, a retired senior technical member of the NPL computing team who is still active in the British Computer Society, reviewed the machines' lives and Donald Kennedy went along to see the last moments of the machines he once helped to maintain.



Computer manager Dickie Bird and chief operator Joyce Brick lay a "wreath" on the console Flexowriter.

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Now there's the XODIAC Network Management System - Data General's new, user-transparent network software. XODIAC lets you hook up any number of AOS-based ECLIPSE systems and keep your entire DDP operation right under your thumb. You can even add our other communications products to access other systems.

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And XODIAC communications are based on the internationally recognised X.25 protocol from CCITT, so you can access public data networks like Telenet in the U.S., Datapac in Canada, and Transpac in France.

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DATA GENERAL

CHRIS YOUTT EXAMINES ISSUES RAISED BY BBC HORIZON PROGRAMME 'GOODBYE GUTENBERG'

Winners and losers in office of the future

ALTHOUGH we tend to judge the advent of the electronic office in terms of personal interest, is it possible to form an objective judgment of its likely impact on Society at large?

According to BBC 2's Horizon programme "Goodbye Gutenberg", this is impossible.

Presenter Anthony Smith suggested the effects would be so far-reaching that they could only be compared to the cultural changes that Europe underwent following the invention of moveable type 500 years ago.

Awareness

He pointed out that the invention of print ended the manuscript industry almost at a stroke, thus ending the power of monasteries

for ever.

It also revolutionised book keeping and led to the founding of political parties and the modern legal system.

Cultural, print created a greater awareness of identity, the bureaucracy, new forms of censorship, new thinking on great religious questions and social divisions.

The electronic office also presents an opportunity for a new moral order.

History has shown that no society can survive without some measure of privacy, yet the electronic office does provide the tools for a very unprivate society.

This is not to suggest that we will face the horrors of 1984: George Orwell's famous book was about the cult of personality in

Stalin's Soviet Union and the way Lord Reith ran the BBC.

Smith is to be congratulated for avoiding confusing secrecy with privacy.

Yet because the electronic office could provide an unprivate world, it could well be the means for bringing the Warsaw Pact countries from the 16th century into the 20th century. Despite being regularly flattered by the Western Press as true Communist regimes, the Workers' Paradise is more akin to Tudor state capitalism.

The electronic office also presents an opportunity for a new moral order.

Certainly the office of the future will free us from the need to communicate directly. This was illustrated by a visit to the Los Angeles

Times where the past three years' editions are kept on disc as well as the current edition being composed.

All the copy is keyed on to disc and can be manipulated by the composers until they are satisfied as to layout, grammar, and length.

The stories are printed photographically, but still have to be passed up on to pages in the positions marked on layout sheets. Printing plates are then made and the paper printed.

The end result is still the same, remarked Angelo Musanti who was in charge of the conversion programme, but it would be possible in the future to send the paper direct to readers' homes electronically.

In a sense this is already here with the various forms of teletext such as British Telecom's Prestel, the BBC's Ceefax, and ITV's Oracle.

This has created a huge new industry which costs the information providers a penny a day to rent a page on Prestel, but the price of receivers and the cost of using telephone lines must come down dramatically, if teletext is to be a viable alternative to print.

Expensive

Traditional forms of communications are rapidly becoming too expensive and too slow for cost effective use.

This has changed our attitudes towards technology. If we look at the professions, probably the most conservative section of the workforce, we find that many offices are leading the way in the rush to get on the bandwagon.

In banking, if it were not for some form of automation, the West's financial structure would have collapsed years ago. Today 95% of UK cheques are sorted by computer.

There are just not the people to do jobs like this manually any more, and, if the banks had not introduced data processing, we would have to pay most of our bills in cash with the only cheques being issued for major items such as house purchase or foreign holidays.

However, it is the Japanese who will most feel the winds of change.

Japan is a male-oriented society.

Women are only allowed to do

domestic tasks such as making the tea, sweeping the floor and filing.

This is attributed to the lack of typewriters.

Shock

Many "feminists" may recoil with shock at this suggestion. However, Smith's statement is quite logical: until these primitive word processing machines came along, few women were able to get jobs, for all secretaries were . . . men.

At present, most communications in Japan are by handwriting or by word of mouth. Now that computerisation has caught up with the complexities of the written word there, it is likely that direct voice input will be a common feature in Japanese offices by the end of the century.

Against this, it must be remembered that the average Japanese office has 50% more white collar staff than its European equivalent.

Apart from questions of cutting labour costs, there are two reasons why Japan is intent on leading the information revolution: its heavy engineering base consumes an excess of imported raw materials and oil; and the number of children who have had a Western style high school education is increasing.

Dictatorship

Unless the labour movement reorganises itself on Chinese lines with only one trade union per industry, then those in the labour movement should be fighting for better working conditions and pay for the employers.

And it is in this area that the labour movement is the weakest.

Despite the image created by popular Press of trade unions as barons, the movement is divided

against itself in the best of ways.

The losers will be semi-skilled

and manual workers: they are at least educated members of society and the skilled can always get a kind of work.

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Despite the image created by popular Press of trade unions as barons, the movement is divided

against itself in the best of ways.

As NUR general secretary Sir

Weighell bravely pointed out at the TUC conference last week, there are too many unions fighting each other for members who should be fighting for better working conditions and pay for the employers.

Packet network

ICAS is based on a Tymnet

16-bit switching mini running

Internally-Switched Interface

System software supplied

by Tymnet in the US. Users will

be able to connect to the node

computer in Tokyo or a concentrator

in Osaka.

X25 will not be implemented on

ICAS and, no connections are

planned to countries other than the

US. These will have to wait for

Venus. Tymnet Engines are also

being used by many PTTs in

Europe to provide packet

switching links to the US.

Within Japan, the internal tele-

communications monopoly Nippon Telephone and Telegraph has

launched the packet switching ver-

sion of its DDX data communica-

tions service following govern-

ment approval and expected to start

next spring.

Shocked

get one's hands dirty for a few

and many teachers seem to be

that industry is fit only for men

who fail their GCE "O" level.

Yet who will make this inno-

vation? Certainly not the mid-

dle Classes as they have not

been educated to work in an of-

fice and would not know what to

soldering iron to pick up.

This is a temporary service, to

be replaced by the Venus interna-

tional packet switching service now awaiting government ap-

proval and expected to start next

spring.

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How to get there

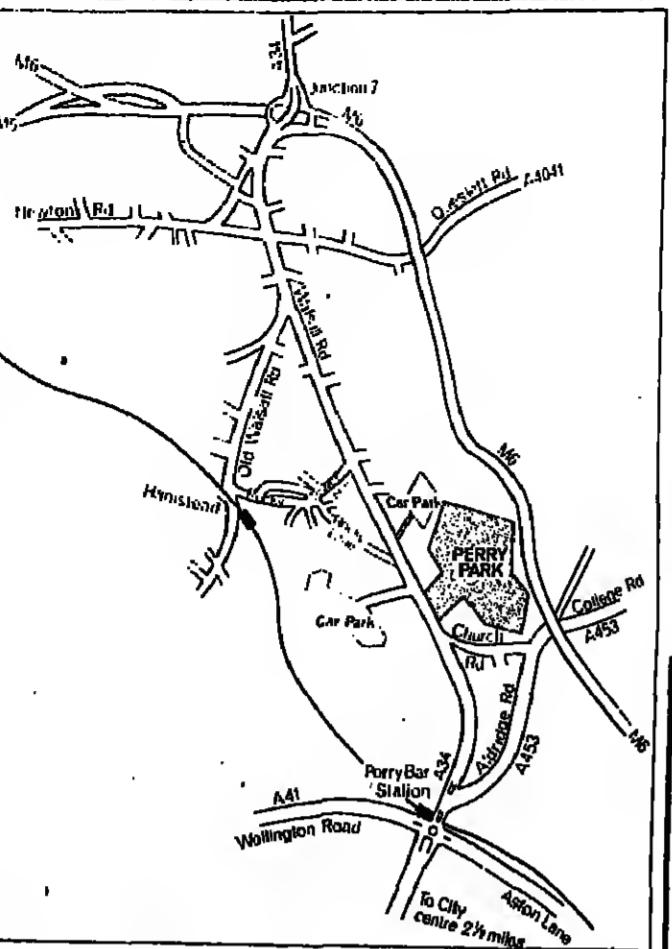
BY TRAIN: from London Euston the service is about every half-hour to Birmingham New Street. There are regular services from Liverpool and Manchester, although some passengers from the North West may have to change at Stafford.

For passengers from the North East, South West and Wales there is about an hourly service from main cities to Birmingham.

When arriving at New Street, there are services to Perry Bar, the nearest station to the stadium, but these are intermittent. It may be quicker to take a bus.

BY BUS: Services from the city centre to the stadium include numbers 33, 42, 46, 51, 52, 59, 90, 91, 107 and 113. Passengers will require loose change for the automatic ticket machines.

BY ROAD: Turn off the M6 at Junction 7 on to the A34 and head down the Walsall Road for about a mile. The stadium is on the left.



All systems go for finals of the DP Olympics

IT'S all systems go for the finals of DP's Olympics, Computastars, which is being held this Saturday, September 13 at the New Alexander Stadium, Perry Bar, Birmingham.

The latest news is that, while competitors are waiting for the results, an international tug-o-war will take place between a UK team, a Dutch team and a Wright Air Conditioning team.

Each team will consist of five men and three ladies. The prize is a barrel of beer which has been donated by Wright Air Conditioning.

Groups

This year all the teams will compete in all the events, the prizes being awarded to the teams and individuals with most points.

The teams have been organised into eight groups. These are:



putable Trophy, presented by Coyaice, publisher of Computer Weekly.

Best Dutch men's team: putable Trophy, presented by Coyaice, publisher of Computer Weekly.

Best UK individual lady: Computer Weekly Rose Bowl, presented by Simon Timm, Editor of Computer Weekly.

Best UK individual man: Computer Weekly Cup, presented by Simon Timm, Editor of Computer Weekly.

Best UK ladies' team: Wright Trophy, presented by Anne Wright, director of Wright Air Conditioning.

Group 2 (men): Infonet, Digital Equipment, Woolworth, Computer and NPL.

Group 3 (ladies): Thorn EMI (Telford), Lega & General, CEBU, Metal Box, Midland Household Stores and Safe Computing.

Group 4 (men): United Biscuits, Swetzer Zeitzinger, CMC, Rank Toshiba and Data Process.

Group 5 (ladies): Rowntree Mackintosh, Control Data, ARC, London Transport, United Biscuits and Thorn EMI (Hayes).

Group 6 (men): Data Logic, Segas, CEBU, Computer Data Services and Mettoy.

Group 7 (ladies): Reckitt & Colman, Norwich Union, Segas, Infonet, Esamax and PMSL.

Group 8 (men): RAF, ARC, Rowntree Mackintosh, Control Data, Blackwells, and London Borough of Lambeth.

Parking

Admission on the day is £1 for adults and 60p for children under 14. Both alcohol and non-alcoholic refreshments will be available and there is free car parking.

For the children there is an art competition, sponsored by Safe Computing.

Events start at 10:00 am and it is hoped that the presentations of trophies, which are worth over £3,000, will be made about 6:00 pm, 15 minutes after the last Computastars event.

Computastars is sponsored by Computer Weekly, Wright Air Conditioning and the Dutch magazine Computable.

Medals for first, second and third places in both team and individual events have been provided by Wright Air Conditioning.

Presentations

Art competition: Safe Computer Under 10 and Safe Computer Over 10, both presented by Ken Jackson, general manager of Safe Computing.

Best individual Dutch lady: ECCS Rose Bowl, presented by Wes Evers of ECCS.

Best individual Dutch man: ECCS Cup, presented by Wes Evers of ECCS.

Best Dutch ladies' team: Com-

First System 38 in UK

THE relational database of IBM's System 38 has recently bowed over the first UK user to take delivery (CW, Sept 4). The user, the Hospital Saving Association, is now able to access any of its 700,000 contributors in a multitude of ways — alphabetically, by group number, and even location.

From the programming point of view the "query" function can retrieve and present data in a variety of formats without conventional programming.

Peter Mischell, systems analyst at HSA, finds System 38 "not difficult" to program, and the department is taking the opportunity to redesign and rewrite rather than convert. It estimates that it will take two programmers 12 months to write the 300 programs and aims to make going live coincide with a move next year to Andover.

HSA said that programming staff had gradually been reduced from 10 for their System 3 model 15 to the present four that are necessary to cope with the more streamlined programming.

The association has a model 5 System 38 with two 3370 disc drives giving 1.3 gigabytes of storage, two system printers and two tape drives.

Printer which can be located almost anywhere; the Control Program operating system, and the single level storage.

Previously access routines had been a problem, when claimants did not submit their policy number, which is used as a key.

The relational database (on System 38) obviates the need for special input and sort programs, and provides automatic updating of all related files on amendment of one. Mike Finch, HSA's management services manager, reports that system development time has been cut by two-thirds, and programs for one particular business application were reduced from 16 (a total of 2,000 lines) to one program of 356 coding lines.

Other features of System 38 are the interactive workstations, consisting of an online screen and



Mike Finch (right) takes delivery of the first System 38 to be shipped into the UK, from IBM manager Ken Crook at the Hospital Saving Association in Lancaster Gate, London.

Micro/minicomputer aids bomb-making

MICROPROCESSOR and minicomputer technologies have been combined by Ferranti Instruments to aid the production of a bomb and mine combination. The system is being used for automatic testing and quality management tasks during the test and inspection stages of the bomb's manufacture.

The minicomputer is a Ferranti Argus 700G with a present 64-megabyte disc capacity due for an increase to 300 megabytes. It has been programmed with the MoD approved Coral-66.

Minc range extended

THREE additions to its range of Minc laboratory computer systems have been announced by Digital Equipment. Called the Minc-23, Minc DCLab-23PT and Minc DCLab-23RSX, the new systems are based on the PDP-11/23 processor and are software-compatible with all current Minc systems.

A portable system with one megabyte of diskette storage, the Minc-23 uses Minc Basic software and can also run RT-11/Furnan.

Minimum configuration for the Minc-23 includes the PDP-11/23

processor, the Minc box, the VT105 graphics terminal and dual 512K diskette drives at £9,610.

For Minc DCLab-23 configurations, minimum equipment includes the PDP-11/23, 10 megabyte hard disc, the VT105 graphics terminal and the Minc box.

Bottom price for the Minc DCLab-23PT is £14,000 and £19,030 for the Minc DCLab-23RSX. All Minc systems can run standalone or link with Digital networks under DCLnet, using Minc Network File Transfer software.

Argus 700 Series 2.

Multipower multispeed multichoice multiprocessor

Flexibility

Argus 700 Series 2 is based on new versions of the Argus 700F and G central processors which can be used individually or in closely coupled groups supported by a multiprocessor operating system.

In its various configurations it's a package designed to meet the needs of almost all control, communications and information handling applications.

A cost effective system, competitively priced.

Speed

At the top end of the range Argus 700 Series 2 offers processing speeds of up to two million instructions per second.

There's a local and cache memory for each Argus 700F and a cache memory for Argus 700G.

Result: reduced load on the memory bus, speeding processing by as much as 60%.

Reduced Load

Intelligent channels with fixed programmes handle routine operations. They have access to the memory bus and operate in parallel with central processors, reducing the central processors load substantially.

Security

No other computer company has more experience than Ferranti in designing dual computer systems for critical, high security tasks.

The architecture of Argus 700 Series 2 provides for pairs of computers to share memory and backing stores and to access common input/output drivers.

From the system builders:
The system builders' computer.

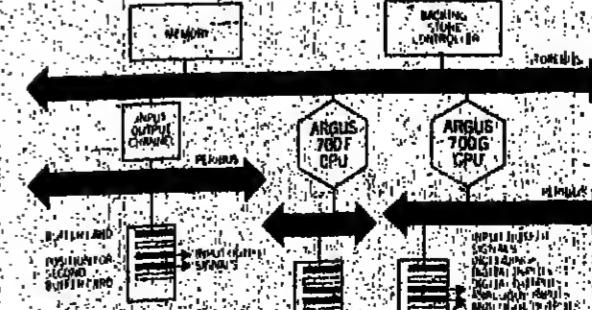
Contact: Equipment Sales, Ferranti Computer Systems Limited, Simonsbury, Wetherby, West Yorkshire, LS23 8LA. Telephone 061-499 3355 Telex: 668084

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How to get there

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How to run a business and stay in the black

by Hugh de Wet

BUSINESSES are in for a tough time ahead, possibly the toughest since 1974-75. With interest rates still alarmingly high, inflation near 20 per cent, and the cost of energy and raw materials escalating, everyone in industry is short of cash.

Such cash shortages quickly lead to serious cash flow problems, and it is only a short step from there to insolvency. Even well-established companies with full order books are going under simply because of a failure to understand the principles of cash management. According to Dian and Bradstreet, the business information company, the rate of company liquidations in the first half of 1980 was higher than at any time since the war — over 120 a week.

"Only those businesses which plan their operations properly,

particularly in the related areas of credit and collections, will survive the current recession with its inflation and shrinking markets," says Don Hadick, general manager of Dian and Bradstreet's commercial collections division.

Steal

One of the things to keep a sharp eye on is the payment period for accounts due. If customers are short of cash in the bank they may decide to tide themselves over at your expense.

Instead of going to the bank for a loan, it is far cheaper for them to sit on their outstanding accounts and steal your credit.

Remember, this practice seldom pays off. Eventually those who steal credit earn themselves a bad reputation.

This can either result in them being charged a higher

price for goods and services supplied, in order to finance the cost of carrying the account, or alternatively, finding themselves unable to obtain vital supplies when they need them most.

There is a real danger in leaving accounts outstanding for long periods, no matter how much or how little credit your customer has, because you will gain a reputation for being soft on credit.

Procedure

So how do you ensure fast payment while still remaining on friendly terms with your customers? It is a good policy to follow a standard procedure with all invoices.

1. Send all invoices immediately, via first class post. The extra speed is worth 5p per £100 per day

at current interest rates (assuming 18 per cent) — more than twice the difference between first and second class postal rates.

2. Send a monthly statement showing all invoices, even if not yet due. This will remind your customer of payments which will shortly be due, and will also establish an early date that your company has an efficient accounting system which is likely to follow up debts promptly.

3. If an invoice is not paid on the due date, flag the file for action in 10 days' time if payment is not received. Any statement sent in the interim should have a notice that: "This statement contains items which are now past due."

4. If after 10 days the invoice is still unpaid, action should be taken. Make a personal telephone approach to your customer to

establish the validity of the claim and check that there are no complaints. If the invoice is not in dispute, establish a firm payment date.

5. Follow this up with a written reminder, as they will know the background upon which they are operating, & nature of the client's business, & the types of customers they deal with.

The problems involved in collecting overdue payments are vastly increased when your customer is based outside the UK. Many companies, anxious to build up sales by exploiting overseas markets, rush to sell goods to overseas customers without fully realising the huge risks involved, as many consequently chalk up losses.

Some of these companies have been lulled into a false sense of security because of the insurance cover provided by the Direct Credit Guarantee Department. What they do not realise is that unless they can prove they have thoroughly researched the creditworthiness of their customers, they cannot claim for losses on their bills.

Differences

Language differences, differences in business ethics, and culture, poor communication and reticence in providing information all hinder the process of making credit decisions. It is important to be much more wary of references from overseas than you would of a potential customer in your home market. Friends, political and family affiliations and financial tie-ups which you do not know about can all serve to refer customers to us, and the new problems apply with overseas

It is obviously important to choose a reputable agency, and it is an advantage if it is linked with a credit information and reporting agency. Few businessmen in their right minds would want to get on the wrong side of such an organisation, and will pay up remarkably quickly if they are contacted by an agency — it is simply not worth risking their credit ratings for the sake of one debt.

Quite often it is not even necessary for the agency to contact the customer. A note in your letter confirming the final settlement date which mentions that a particular agency will be contacted if the invoice remains unpaid is usually sufficient to spur the debtor into action.

It is, however, important to put an unpaid invoice into the hands of an agency as soon as possible after the final settlement date is passed.

The longer an invoice remains unpaid the more difficult it is to collect — and the more it costs, as can be seen from the table.

Failure

Cost is always a factor when considering a collection agency. Most agencies charge a percentage of the sum at stake and the fee is contingent on the successful collection of the debt. These costs are relatively low when you consider the cumulative cost of leaving the debt outstanding plus the administrative cost of chasing it up. Don't forget that you get what you pay for.

Many companies find that it is

worthwhile to maintain permanent links with a debt collecting agency to go into action quickly and efficiently when a problem arises, as they will know the background upon which they are operating, & nature of the client's business, & the types of customers they deal with.

The station is on the fast RER line which runs across central Paris, deep underground, and is perhaps the most noteworthy aspect of the exhibition is that ICL is back with a bang. It had planned to drop out in 1976, but that year acquired Singer Business Machines which gave it a ready-made platform.

Running through to September 26, the premier French computer event will once again fill the CNIT Centre at La Défense, just outside the western limits of the old city of Paris.

After we had put up the sheds for the OEM section, it was pointed out that it was right over the railway station of La Défense which is close to an RER station. The principal lines are Charles de Gaulle-Etoile, Auber-Opera, and Chatelet-Les Halles.

"Then the authorities came along and pointed out that we had

"forgotten" to lay on water or levatoires in the sheds!" said Chappay ruefully.

Highlight of the ICL display,

will be the ME29 computer,

over 300 of which have been sold already. The whole gamut below the ME29 will also get an airing — the System Ten 120, the latest incarnation of the 1500 series, plus the 7700 word processors and terminals for point-of-sale and factory data collection.

ICL will wave the flag for the

British

viewdata standard, available on the ME29, and word processing will also be demonstrated on the new machine.

A British newcomer to Sicob

will be Unilever's UCSL

Microsystems, which will use the

System Ten 120, the latest incarnation of the 1500 series, plus the 7700 word processors and terminals for point-of-sale and factory data collection.

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IDPM/LANGTON AWARD

Improving efficiency of the effectiveness people

NEVER generalise. Office work is not an indivisible whole that will be affected evenly by automation. It can be defined and compartmentalised in an infinity of ways, but the neatest is to split it into efficiency work and effectiveness work.

The man on the shop floor is an efficiency worker. What he produces is discrete and measurable, and, for 60 years, work study men have measured what his output is and what it might be.

Work study men - under the guise of clerical work measurement men - have moved measurement into some office jobs: typists and invoice clerks and data prep girls. What these jobs

produce can be measured by what gets into the out tray.

We reach a point, though, where we move into a world of office work where the output cannot be measured in that simple, direct way.

Beyond that point lie the effectiveness jobs, where the output is not pieces of paper, but - through a mystical transformation - the impact these pieces of paper have on the company.

MBO, PPB and ZBB - and all the other techniques which seemed

fresh and vital at the time but which were really pretty much the same - have tried but never quite managed to put a measure on what the effectiveness man does. The

dividing line can get a shade hazy, but let us settle for this simple classification of efficiency and effectiveness jobs (and people).

Ever since the merchants moved out of their studies and the coffee houses and began to work in offices, the efficiency people have coped with technical change.

Challenge

At the turn of the century their great-grandparents would have listened politely as the office manager shuffled his feet and toyed with his fob-watch mumble the eternal platitudes about the challenge of change, and evolution not revolution, before announcing that

as from Monday there would be installed a typewriter/telephone/duplicator/letter addressing machine.

They adapted.

And, for the efficiency people, 1980's technology is just another tiny incremental step along the road their great grandparents trod.

The effectiveness people have never been exposed to that scale of change. They still sit, as they always have, looking thoughtfully at a piece of paper, and that thoughtful pose has been the same whether the piece of paper was produced on the Patent Paraffin Wax Letter Copying Machine (as favourably commented upon by HRH Prince Albert) or by a hallucinogenic

copier fluid or by Xerox.

The absorbing issue in looking at the future of office automation is how it will affect the effectiveness people - not simply because they have barely been affected by technical change in the past, but because some big, big money is riding on the assumption that the advances of the 1980s will capture the effectiveness market.

Improving

What matters, runs the conventional wisdom, is not trimming 1.25 cents from the typing pool but improving the effectiveness of the effectiveness people.

One crucial difference between the groups is that effectiveness people are more influential than efficiency people. In the bad old days, efficiency people were told that technical change was about to hit them.

Now they are consulted collectively through their representatives about impending change but, with a few honourable exceptions, they are not consulted individually.

Effectiveness people would be consulted individually and they are capable of accelerating technical change by being enthusiastic or of deferring it, indefinitely, by pointing to so many variations and anomalies and special conditions that the sensible systems man will back away from the edge of the bottomless pit which would gobble up man-decades of programming effort.

It follows that automation will affect the effectiveness people only if they permit it. That conclusion is known in the trade as an evidence-free assertion, and it deserves to be qualified in two ways.

Obviously, it is possible for strong-willed top management to force new technology on effectiveness people, but it would be very difficult to ensure that it is used in the way that was planned.

Necessity

Obviously, in turn, some great economic upheaval could make automation a necessity so that, for instance, with travel to work impossible, we work from terminals in our homes.

If we ever reach that point, all that we are likely to be doing in our homes is to grow vegetables in the window box to achieve self-sufficiency.

If automation can come to the effectiveness people only if they want it, then they will want it only if it fits their beliefs about themselves and their work.

The effectiveness man has a set of values, which look like this:

1. He believes in status. He does not particularly want to work in an open plan office or to share a dining room with those of lower status (and he is not at all resentful that those of higher status should prefer to eat separately). He believes his status should be mirrored by the status of his support team.

He knows that under a job evaluation scheme the grade of a secretary ought to reflect the organisational position of her boss.

2. He expects, within reason, to have freedom of action to organise his own day, to do things his own way. He will conform to any rules the organisation care to lay down, but in those areas where there are no rules, he guards his freedom of action jealously.

3. He is loyal to the organisation, but his primary loyalty is to his department. He knows that

what is best for the organisation is not necessarily the same as what is best for his department, and, if there is a conflict between the two, what is best for his department is what he fights for.

Unfair people - foreigners, perhaps - might say that these values of status, freedom and loyalty could be entitled "mobocracy," "anarchy" and "decadence".

In extreme cases they might turn out that way, but they are values solidly at the centre of the UK office culture.

If this argument is solid and, if the effectiveness man can block any advance that does not fit his sense of values, which advances if any - will be accepted? By this stage, we have dropped the efficiency people, and we ought to go for brevity and avoid sexism and call the remaining group the EP, the effectiveness person (or people).

Messages

There are several techniques available for winging information up and down and across the organisation. All are based on the assumption that faster information is better information.

That, knows the effectiveness man, is not necessarily so.

Now, it is generally true that a few hours' delay is better than a few days' delay, but that relationship does not hold good when we move down into differences between hours and minutes and seconds.

The effectiveness man knows that fast information encourages fast shooting-from-the-hip response. In such shoot-outs the bullet serves to be qualified in all directions.

The EP knows that it can be thoroughly dangerous to release information simultaneously to different levels of management. For instance, if the EP gets an electronic message that the number three Big Thumper has broken down, he can draw on his long experience to evaluate that message.

He knows there is a law of nature which says that the Big Thumper will sometimes break down and will sometimes be broken down; and he knows that by the time he gets the message, he will be trying to fix it.

If that message gets flashed up to senior levels of management, hooked into the information network, then it will be seen by them with "no practical knowledge" of those laws of nature, which govern the running of the Big Thumper. They may well contact him, the now super-incompetent Thumper Shop supervisor, and the Big Thumper knows who ought to be out there getting it running again instead of wasting their time in electronic conversations.

Filing

The EP might tolerate - occasionally even welcome - faster information coming up to him, but he is sure to try to block any development which would move more information from his own people into the hands of others more quickly than those above him or the screens of those in other departments or in those in other departments.

It is easy to see a growth of electronic data retrieval, covering the public domain. There is a fair volume of neutral, uninteresting data within a company which

the terminal user is not interested in, but the word processor itself is.

The demand for computer-based decision-making techniques increases. There are some decisions which, mathematical steps are involved in and a touch of respectability.

For instance, the terminal user might calculate that a discount will now calculate a discounted price, but that a discounted price does not calculate a fair value of neutral, uninteresting data within a company which

the calculation is a res

A quiet revolution is going on in the UK's offices - that of automation. It could have far-reaching effects on the way we work, and on our cultural values.

In this the first of three articles, which was the winner of the Institute of Data Processing Management/Langton Award, JOHN FINNIE looks at the practical implications of office automation.

Finnie, who won £300, works for GKN Group Management Services in the West Midlands.

From page 28

could be tapped, and, if the economics are right, there will be a growing volume of information from external databanks which could be called up.

That use is bound to grow, but there are three main reasons why we are no more likely to have a paperless office than have a cashless society.

Above the DCF calculation is a threatening. Calls come randomly - some might be buffered, but insistent senior people can burst through the buffers. The call needs some immediate response.

That makes it altogether too hostile to the EP. Any attempt to introduce it will result in permanent "We regret the temporary

of assumptions and guesses and bunches about the future.

Certainly, you could call up a risk analysis program on the terminal, and tap in probabilities, but all that really shows - as many empirical studies have demonstrated - is that born optimists take optimistic decisions and born pessimists expect the worst.

The telephone is more threatening. Calls come randomly - some might be buffered, but insistent senior people can burst through the buffers. The call needs some immediate response.

Obviously, there are examples of new technology at work, but if you look closely you will find these excesses only happen in:

1. Organisations which produce

loss of vision" signs on the screen. But . . . but, you splutter, it is outrageous to dismiss vast areas of new technology on the basis of a generalisation on EP values. But, you say, my brother-in-law's neighbour plays golf with a man who has only to point a laser beam at a filing cabinet and it will move silently on castors right up to his demonstration site.

2. Incredibly rich companies such as the oil multinationals - where the profits are so embarrassing that they will spend money on anything to reduce them.

3. Organisations where there is a hobbyist (where the boss accedes to the latest outrageous request to stop the smell from the soldering iron burning the desk top).

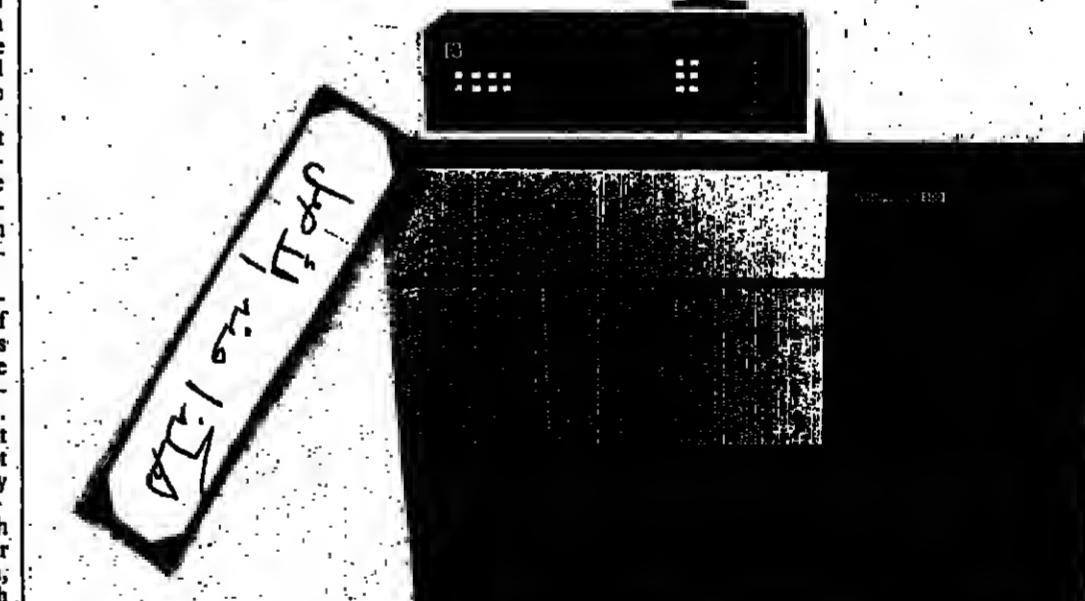
4. Organisations in the grip of behaviourist scientists or organisation development theorists or US parents, where an attempt is being made to break up the old cultural values. Values can be changed temporarily, but the laws of gen-

ics show that everything eventually reverts to the mean.

In short, it could be worthwhile investing in companies which limit themselves to the efficiency market. In the effectiveness market, there could be money to be made if the systems are confined to the iron-butt area of control and are not linked to any other part of the organisation.

Where the product upsets the traditional values of the EP, then an investment is only to be recommended where the investor wants to enter an extreme form of holy orders and needs to achieve total poverty quickly.

Will managers bypass their secretaries and use word processors?



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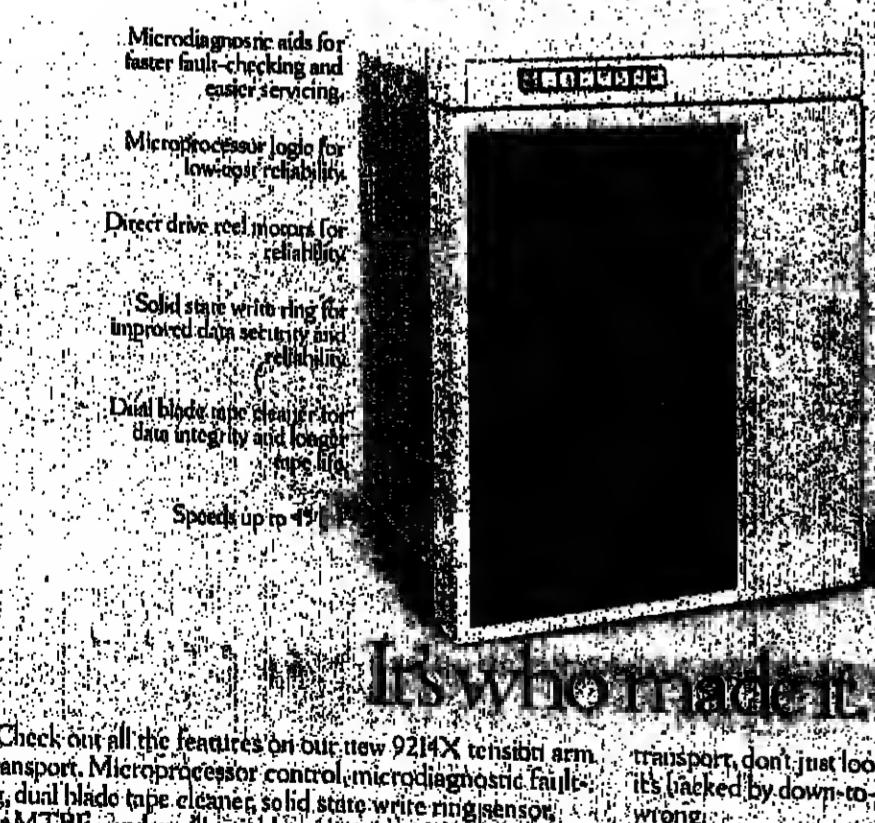
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CONTROL
DATA

27

BOOK REVIEWS

Spelling out the mysteries of the industry

The Penguin Dictionary of Computers, by Anthony Chandler with John Graham and Robin Williamson, 440pp, £1.95, Penguin Books Ltd (CW), 17 Grosvenor Gardens, London, SW1.

DO you know what a crippled leap-frog test is, or the difference between graceful degradation and growing old?

Probably not.

One of the biggest curses of DP is the number of words, phrases and acronyms that abound with abandon. Even to people who have been in the industry for 10 years there is still plenty to get confused about.

Of the many aids to the jargon, this is probably the best. The main virtue of the book is that it is

manufacturer-independent: thus taking definitions that apply to the whole of DP as opposed to specialised meanings.

Some topics in it are dealt with in greater depth than others as the authors have recognised that plenty of the book's readers will be laymen. There are over 3,000 words, phrases and acronyms in it; also short in-depth articles on the more technically minded on topics such as decision tables, Alog, remote testing and virtual storage.

However, it is in this area that the book, by 1980 standards, falls down. There is little mention of chips or the latest technology such as bubble memories and charge coupled devices.

But at £1.95, this is a book you can afford to buy and throw away every time an update comes out.

All homes need one!

The New Penguin Dictionary of Electronics, by Carol Young, 818pp, £1.95, Penguin Books Ltd (CW), 17 Grosvenor Gardens, London, SW1.

THIS book replaces the former Penguin Dictionary of Electronics and is primarily concerned with the words and terms used in electronic research and industry and in solid state theory and also contains terms used in the related fields of computers, communications and electrical engineering.

On the new terms, particularly the DP words, the book gives a detailed description of each with diagrams where appropriate. Most of the text can be understood by anyone educated to GCE "O" Level standard.

The book is the best I have seen on the market for the whole field of electronics: every home should have one. It is worth every penny.

Benn's policy for coping with new technology

TOBY BENN: Arguments for Socialism, edited by Chris Mullin, 206pp, £1.50, Penguin Books Ltd (CW), 17 Grosvenor Gardens, London, SW1.

With Jim Callaghan probably about to go and Shirley Williams not an MP, he has to face only Dennis Healey and possibly Peter Shore and John Silkin.

TONY BENN — the very same roused passions in most of us: he is either the man we love to hate or the man who stands at Keir Hardie's right side, or at least a bit nearer than most in the Labour Party.

Yet despite what the popular press writes about him, he is an enigma and at no time in his political career has he been nearer to getting the keys to 10 Downing Street than at present.

Technology

Since becoming part of Labour's First XV, Benn has been closely involved with technology: he was Postmaster General in 1964, Minister of Technology (Mintech) in 1966, Minister of Power in 1969, Industry Minister and Minister of Posts and Telecommunications in 1974 and Energy Minister from 1975 to 1979.

Benn says the idea behind the National Enterprise Board was that financial aid to major firms should be linked to the objectives of planning agreements. The government would be able to use data from such agreements in planning its own strategy.

Benn offers a number of proposals for reforming State-owned industries. These are: Genuine worker participation in management, better relations between the public sector and consumers. He urges the public sector to find new ways of relating to the communities in which its operations are conducted, and says they must take fuller account of the supply industries which depend on them; the planning mechanisms of nationalised industries must relate with each other; there must be proper accountability to Parliament and not to civil servants or managers; and public ownership should be more flexible, taking, for example, some parts of an industry or giving local authorities powers to take over firms.

Nationalisation

However, Benn does not appear to advocate nationalising those assets sold off by the present government.

He points to the dangers of creating a technological priesthood and of failing to obtain adequate explanations.

Despite his conversion to the anti-BBC camp, he has consistently pointed out that membership of the Community allows commissioners to interfere with investment in firms such as JCL and Ferranti without reference to Parliament.

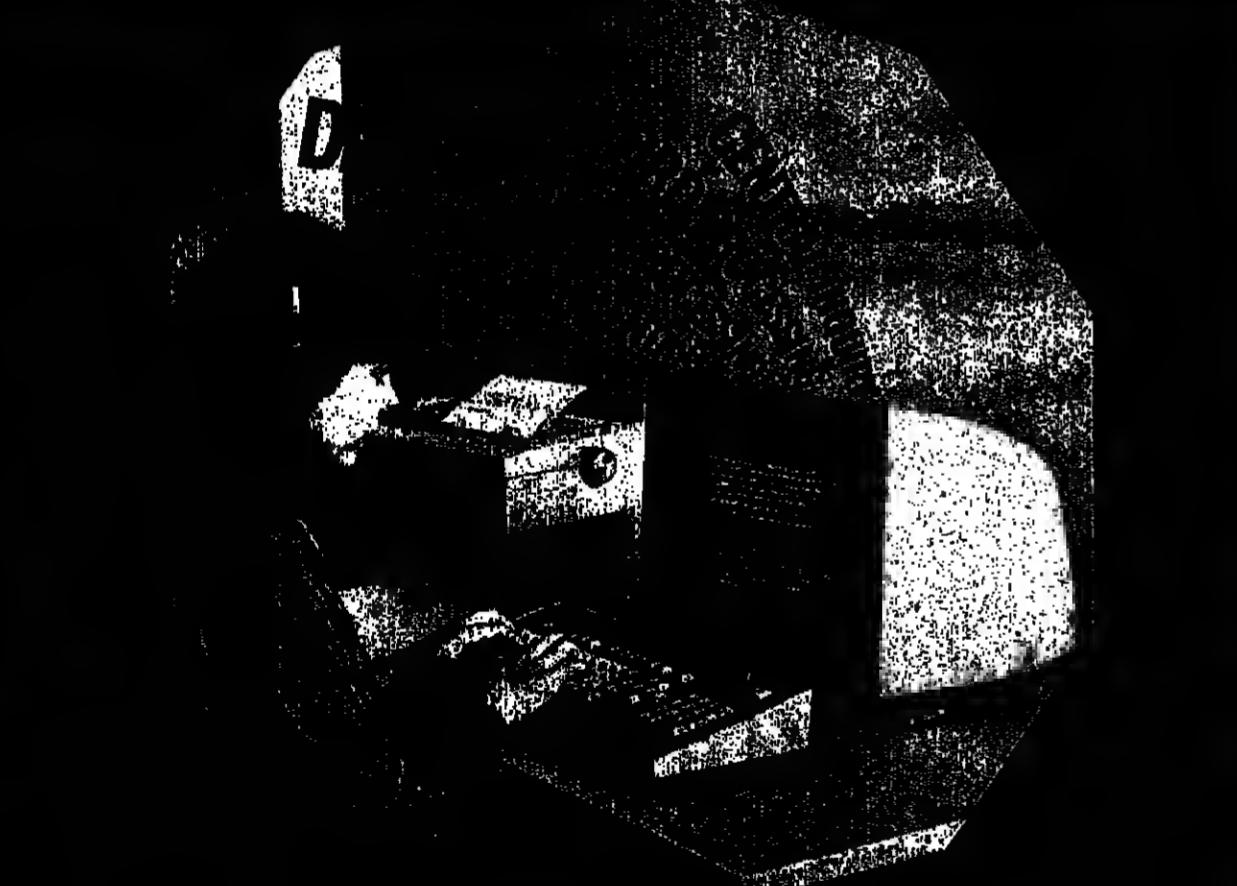
He claims the BBC is dedicated to creating a text-book free market economy which would mean the weakest going to the wall.

It is quite possible that firms like ICL, Ferranti and SPL would have gone under had the UK been a member of the EEC.

What can this mean to you?

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For details on the above vacancies and other permanent opportunities, please telephone Rachel Martin.

Always on, Knights Sue Smyth and Joanne McKeagle are always happy to advise you on career opportunities.

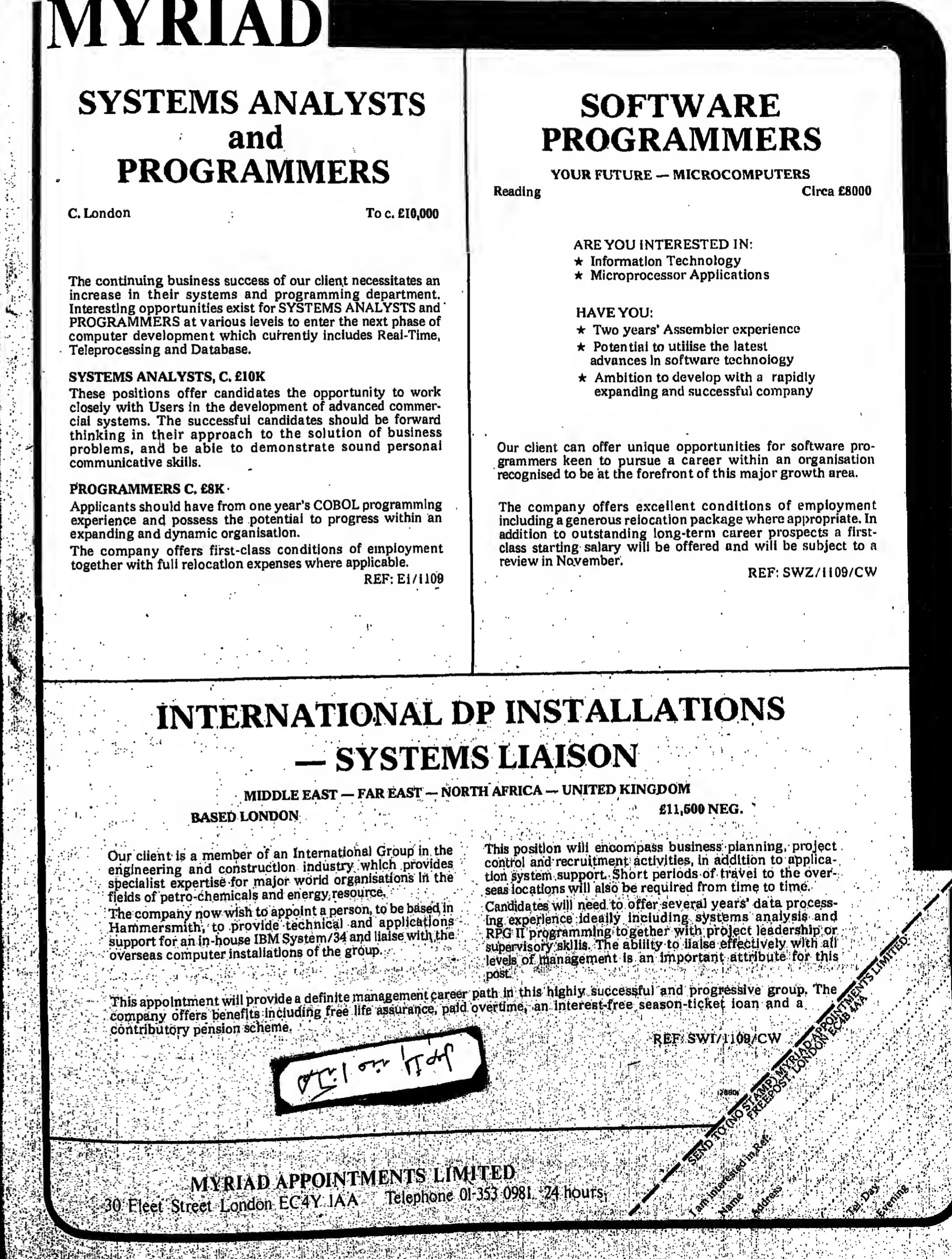
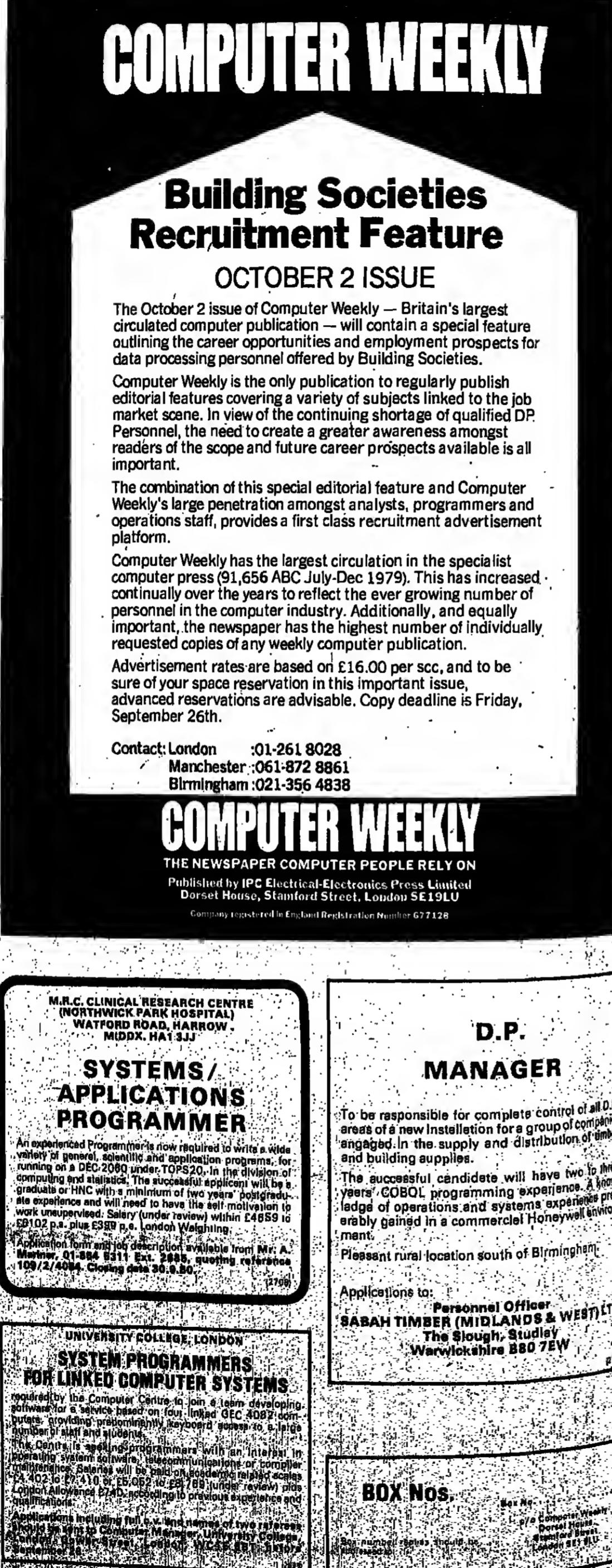
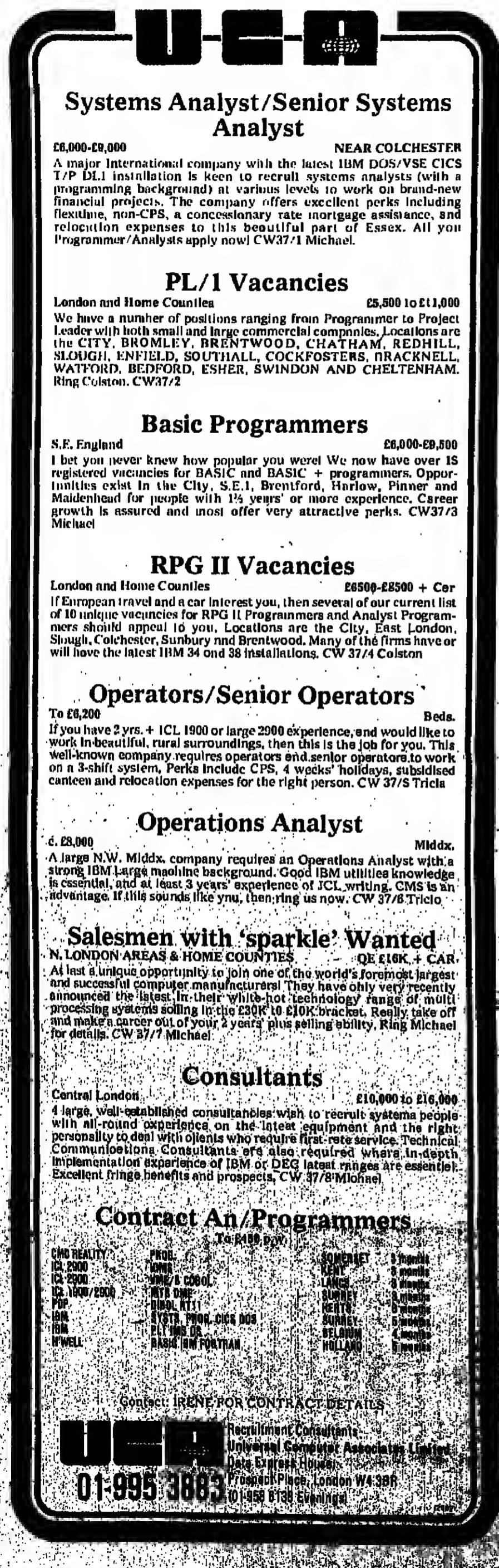
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£1,600	SENIOR PROGRAMMER	WARKS	£1,750
3-4 years' commercial programming application experience (mainframe). Technical experience in systems. Supervisory experience.			
C. £7,000	SYSTEMS ANALYST	COVENTRY	£1,750
2-3 years' analysis experience. Commercial background.			
Up to £8,000	SYSTEMS DESIGNER	CHELTENHAM	£2,000
2 years' minimum ICL 1900 experience as either systems analyst or systems programmer. Little user contact.			
£1,600	SENIOR PROGRAMMER	WORCS	£2,000
Minimum 3 years' IBM experience, substantial CICS experience.			
C. £7,000	COBOL PROGRAMMER	WORCS	£2,000
Approximately 10 months' COBOL experience. Developing real time on-line systems.			
£1,600	SENIOR PROGRAMMER	COVENTRY	£2,000
3-5 years' programming experience using COBOL, preferably on ICL equipment. Supervisory experience an advantage.			
£8,000+	PROGRAMMER	HEREFORDSHIRE	£2,000
2 years' experience Basic programming to work on Onia General equipment.			

Consultant: Hazel Foggin

To £7,500	ANALYST/PROGRAMMER	BIRMINGHAM	£1,800
Experience required in RPGII, preferably ICL hardware. With approximately one year's analysis experience. Commercial applications.			
Min. £8,300	BUSINESS ANALYST	BIRMINGHAM	£1,800
Business Analysis experience, one O or M or Work Study. 'A' level education desirable. Large national manufacturing organisation.			
£8,000	PROGRAMMERS	CITY CENTRE	£1,800
1 year plus COBOL experience. Unived hardware. Bureau environment. Commercial applications.			
£1,600	PROGRAMMERS	BIRMINGHAM	£1,800
Programmers to work on Datapoint minis using Datashare preferably or any other interactive language.			
£8,200+	PROGRAMMERS	BIRMINGHAM	£1,800
Experience of ICL COBOL is required. Financial/Commercial applications. Insurance Company. Excellent fringe benefits.			
To £7,000	PROGRAMMERS	BIRMINGHAM	£1,800
2 years+ COBOL preferably mainframe. Commercial and financial applications. New hardware recently installed.			
To £8,000	PROGRAMMERS	BIRMINGHAM	£1,800
1-3 years' BASIC programming experience. RTII or RSTS/E Bureau environment. Commercial applications. New office accommodation.			

Consultant: Christine Pountney

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COBOL experience essential to work on a range of financial applications.			
C. £2,000	PROGRAMMERS	DUROLEY	£1,16
Experienced. PL/I commercial applications. Programmers for manufacturing systems.			
£8,000+	PROGRAMMER	WEBB BROMWICH	£1,21
Minimum 2 years' IBM COBOL experience. Database & Real Time experience advantageous.			
To £8,500	PROGRAMMER	DUDLEY	£1,24
COBOL experience with PL/I desirable. ICL 2800 advantageous. TR & Database applications.			
To £8,500+	PROGRAMMERS	WEBB MIDLANDS	£1,21
Skilled programmers required preferably with experience of IBM small systems — RPGII, Assembler, EOX or other.			
To £8,000+	CHIEF PROGRAMMER	MANCHESTER	£1,33
Extensive COBOL experience required. Assembler, IMS and TSO advantageous. IBM necessary, OS MVS desirable. Consultative, managerial position with scope.			
£8,000	PROJECT LEADER	WEST MIDLANDS	£1,51
To lead a team working on advanced management accounting and financial modelling techniques.			

Consultant: Peter Bowes

C. £7,500	SENIOR PROGRAMMER	NOTTS	£1,44
Experience of RPGII programming coupled with at least 6 months working under CCP.			
£8,000	MAINTENANCE PROGRAMMER	LINCS	£1,45
Minimum of 2 years' COBOL programming, ideally with knowledge of CICS.			
To £7,500 + Bonus	TEAM LEADER	SUFFOLK	£1,48
(IBM experience desirable coupled with DOS/VMS, CICS and COBOL or PL/I) programming plus analysis, supervisory tools, Accounting and sales systems.			
Up to £7,500	ANALYST/PROGRAMMER	CAMBRIDGESHIRE	£1,49
To develop new systems and enhance existing systems on IBM minis and mainframes. Distribution.			
£1,600	PROGRAMMER	LEICESTER	£1,48
With experience of ICL 1800 series, and DEC minis, with relevant COBOL and Basic plus. Commercial environment. Senior position.			
£8,000+	SENIOR OPERATOR	SHEFFIELD	£1,48
£8,000 to £9,000	PROGRAMMER	LEICESTER	£1,48
Minimum of 2 years' COBOL programming experience preferably on IBM hardware. Training offered for on-line applications.			

Consultant: Peter Bowes

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For further details and an application form, telephone or write to the Personnel Officer, Royal College of Nursing, Henrietta Place, London W1M 0AB. Tel: 01-580 2645.

Ron
Royal College of Nursing

WORCESTERSHIRE

SYSTEMS PROJECTS MANAGER and SYSTEMS ANALYSTS

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Our clients, part of an international company, are a major force in retailing.

They are embarking on an exciting development programme which is based on the introduction of DATABASE and COMMUNICATIONS facilities.

Equipment is an ICL 2950 and IDMS will be installed. Additionally, major innovations will take place using MICRO-COMPUTERS for advanced POINT-OF-SALE applications.

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ANALYSTS should offer a minimum of one year designing commerce systems, or slightly longer, in an Analyst/Programmer role.

In neither case is previous experience in the technical areas mentioned considered essential. Necessary TRAINING will be provided.

The Company Headquarters is situated in rural Worcestershire within easy commuting distance of Birmingham. Where applicable, generous relocation expenses will be covered.

The working environment is exceptionally good and the commitment to development will create further career opportunities.

Male or female candidates should contact Patrick Convey quoting ref. no. CW 283.

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CPC

SOUTH AFRICA

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Our clients are installing a sophisticated computer network based on ICL hardware for South Africa's electricity supplier. They are seeking experienced SYSTEMS PROGRAMMERS/CONSULTANTS/PROJECT LEADERS to support and develop this large user. Successful candidates must have a sound knowledge of ICL 2903/4 operating software and utilities communication software including MTS/ETS and COBOL programming. Duties will involve system design, user liaison and system fault analysis.

Located in Johannesburg, the superb offices are located in parkland with swimming pools, saunas etc. laid-on. Other centres are located throughout South Africa enabling candidates to visit various areas.

Successful candidates will be offered two year (renewable) contracts. The £16,000 package is extremely attractive by South African standards and in addition candidates will qualify for bonuses and merit rises. A generous relocation package makes this a unique opportunity to experience South African sunshine and high living standards.

Successful applicants will be interviewed by our clients on 1 October. In the first instance please telephone Ched Stolper of Prescot Computers Limited on (01) 434 2914 or (01) 434 2649. If you prefer write to him at Prescot Computers Limited, 43, Codd Street, London W1R 9FB.

**£15,000
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Informatics will be interviewing in London and Manchester for positions in the USA during the week of September 22, 1980. To arrange a confidential expense paid interview send resume immediately or telephone Ms. Mary Casillo at our London Office (01-405 8546). Reverse charges accepted.

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Atrio House
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SENIOR SYSTEMS ANALYST/PROGRAMMER

(Thames Valley Area)

Senior Systems Analyst/Programmer required for expanding company producing known brands of various load products.

The successful candidate will have had 3-5 years experience in mainly interactive systems with good all round commercial reputation and now be ready to meet the challenge of a management position. The ability to programme COBOL and basic languages and communicate with all levels of staff is essential. You will report directly to the Managing Director and the immediate job is to take total responsibility for the Data General mini computer installation including implementing the usual commercial systems for a first time user and future development.

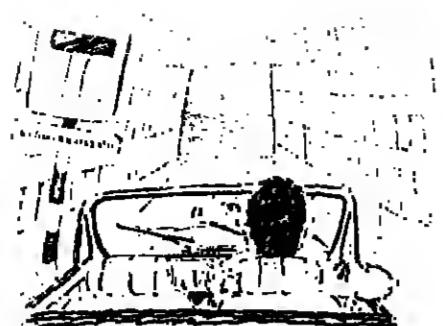
Salary in £9,000. There is a good contributory pension and life assurance scheme in operation.

This is an excellent opportunity to join a friendly but vigorous company with broad career prospects.

Please contact Personnel Manager, Menzies Retcliffe Ltd., Tower Read, Buntingfield, Oxford, for application form.



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required by the Computer Centre to join a team developing software for a service based on four linked GEC 4082 computers, providing predominantly keyboard access to a large number of staff and students.

The Centre is seeking programmers with an interest in operating system software, telecommunications or compiler maintenance. Salaries will be paid on academic scales £4,402 to £7,410 or £5,052 to £8,769 (under review) plus London Allowance £740, according to previous experience and qualifications.

Applications including full s.v. and names of two referees should be sent to Computer Manager, University College, London, Gower Street, London, WC1E 8BT, before September 24.

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A major Systems manufacturer with tremendous growth record and potential within UK market is offering tremendous opportunities to DTP professionals looking for a move up.

In recent years they have established themselves as a leading supplier of Superior DDP/Transaction Process/Mini Computer Systems.

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If your background includes sales experience in small business systems or IBM 3270 replacement system, your successful application will take you to the States for extensive training, providing you with the opportunity to earn a quota minimum of 16K.

The company, who are a large and profitable multi-national are restructuring their sales and marketing team to launch a vigorous sales campaign into the UK market.

They have an excellent existing installed base, requiring enhancement coupled with a powerful range of equipment which is destined to become a market leader.

For an immediate interview or discussion about an outstanding opportunity, telephone Mr. Owen Hill, Ref: ODH 14, London Office.

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North: Austin House, Chichester Street, Manchester 1 Tel: 061-236 7020

International: Voden House, 43-49 Marylebone High Street, London W1M 3RS Tel: 01-486 7938

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Systems Analyst/Senior Systems Analyst

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A major international company with the latest IBM DOS/VSE CICS T/P DLI installation is keen to recruit systems analysts (with a programming background) at various levels to work on brand-new financial projects. The company offers excellent perks including flexitime, non-CPS, a concessionary rate mortgage assistance, and relocation expenses to this beautiful part of Essex. All you need to do is apply now! CW37/1 Michael.

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London and Home Counties

£5,500 to £11,000

We have a number of positions ranging from Programmer to Project Leader with both small and large commercial companies. Locations are the CITY, BROMLEY, BRENTWOOD, CHATHAM, REDHILL, SLOUGH, ENFIELD, SOUTHALL, COCKFOSTERS, BRACKNELL, WATFORD, BEDFORD, ESHER, SWINDON AND CHELTENHAM. Ring Colston, CW37/2

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S.E. England

£8,000-£9,000

I bet you never knew how popular you were! We now have over 15 registered vacancies for BASIC and BASIC + programmers. Opportunities exist in the City, S.E.1, Brentford, Harlow, Pinner and Maldenhead for people with 1½ years' or more experience. Career growth is assured and most offer very attractive perks. CW37/3 Michael

RPG II Vacancies

London and Home Counties

£8,500-£8,600 + Car

If European travel and a car interest you, then several of our current list of 10 unique vacancies for RPG II Programmers and Analyst Programmers should appeal to you. Locations are the City, East London, Slough, Colchester, Sunbury and Brentwood. Many of the firms have or will have the latest IBM 34 and 38 installations. CW 37/4 Colston

Operators/Senior Operators

To £8,200

If you have 2 yrs. + ICL 1800 or large 2800 experience, and would like to work in beautiful, rural surroundings, then this is the job for you. This well-known company requires operators and senior operators to work on a 3-shift system. Perks include CPS, 4 weeks' holiday, subsidised canteen and relocation expenses for the right person. CW 37/5 Triclo

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c. £8,000

A large N.W. Middx. company requires an Operations Analyst with a strong IBM Large machine background. Good IBM utilities knowledge is essential, and at least 3 years' experience of JCL writing, CMS is an advantage. If this sounds like you, then ring us now. CW 37/6 Triclo

Salesmen with 'sparkle' Wanted

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£8,18K + CAR

At last a unique opportunity to join one of the world's foremost largest and successful computer manufacturers! They have only very recently announced the latest in their white-hot technology: range of multi-processing systems selling in the £30K-10 £10K bracket. Really take off and make a career out of your 2 years' plus selling ability. Ring Michael for details. CW 37/7 Michael

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Central London

£10,000 to £16,000

4 large, well-established consultancies wish to recruit systems people with all-round experience on the latest equipment and the right personality to deal with clients who require first-rate service. Technical Communications Consultants are also required where in-depth implementation experience of IBM or DEC latest ranges are essential. Excellent fringe benefits and prospects. CW 37/8 Michael

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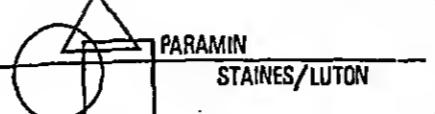
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At Borehamwood, Marconi Avionics has developed an unrivalled experience in this field. And with this, our software engineering teams have gained a unique talent.

To be a man or woman heading one of these teams means to lead a group of specialists involved in all aspects of an avionics project, from inception

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It also means that you will have had a minimum of five years experience of software engineering which, in addition to giving you a detailed knowledge of both high and low level languages, will have made you familiar with modern design techniques. You will also be able to co-ordinate the efforts of a team of software specialists during all stages of a complex project.

For further details, please write to, or telephone, Chris Hill, Marconi Avionics Limited, Elstree Way, Borehamwood, Herts. Telephone 01-953 2030 extn 3449. Please quote reference MA 80/45.

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If complete artwork is supplied 11 a.m. on a Tuesday, ring Ray Kelly for further details on 01-261 8016.

IMI titanium

Systems Analyst/Programmer

South Wales.

IMI Titanium, Western Europe's largest manufacturer of titanium and titanium alloys, has a vacancy for a Systems Analyst/Programmer in the Systems/Development Section of its Weymouth Plant, near Swindon.

At present the Section uses computers for a range of applications including stock valuation, order processing and invoicing, the preparation of wages and preparation of product costing/trading information. The Section is also involved in the development of programmes for new applications and the person appointed will be expected to lead this work.

Candidates, male or female, should have a degree in Computer Studies or an associated discipline, or a knowledge of COBOL as used in industrial applications. Candidates should also have systems analysis experience in manufacturing industry.

Assistance with relocation costs may be given in appropriate circumstances.

Applications, quoting reference number 120/80, should be forwarded to Mr J.A.C. Goodyer, Personnel Manager, IMI Titanium, P.O. Box 216, Witton, Birmingham B4 7BA.

IMI

Two Key Appointments - Computers Training in the U.S.A.

The company has a good record of selling into the University, research establishments, public utilities' markets, and they are now preparing to expand and attack the commercial market sector.

They will recruit two experienced, professional salesmen to cover territories North and South of Central London and the Home Counties.

Training with this large and profitable International organisation will take place at their Headquarters in the USA.

Salary and income plan is by negotiation.

London Office for an immediate interview. Quoting Ref. ODH 12.

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INSIGHT

COMPUTER OPERATOR

The Computing Laboratory of the National Institute for Medical Research requires a computer operator for the laboratory's DEC 2040 and Hewlett Packard 3000 computers. The DEC 2040 was installed in April 1980 and will become the main machine used in the Institute. The operator will be responsible for all normal operator's duties and will also be involved in assisting users on the operation of the machine.

The academic qualifications for the post are normally five 'O' levels or equivalent but applicants with suitable experience will be considered. After successful application, growth and promotion opportunities will be available with an enviable growth and security record.

NEW OPPORTUNITIES
Growth and more growth is the principal reason for two new offices being opened by this major mini manufacturer. Their reputation and future expansion depend on experienced and enterprising able to accept the challenge offered by one of the 'big four' names in mini.

The Institute offers excellent working conditions in pleasant rural surroundings, good sports facilities and also the use of the Institute Restaurant. Please apply to: Mr. P. J. Wilder, Director of Personnel, N.I.M.R., London NW7 1AA. Tel: 01-960 4204.

(2837)

A. B. EXECUTIVE (KINGSTON) LTD
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WEST MIDLANDS PROJECT MANAGER and PROGRAMMING TEAM LEADERS

CIRCA £8,500 plus COMPANY CAR

Our client is a leading minicomputer turnkey systems house, seeking to expand their team of professional staff. The company market a range of minicomputer equipment, from a highly reputable source, and provide a full applications development service. These positions offer a real challenge to play a decisive part in the growth of the company.

As PROJECT MANAGER, you would have responsibility for a customer's development, from initial feasibility stage, through to implementation. Extensive systems experience in the commercial, financial or production areas will be required, plus the ability to control a project and to deal directly and competently with clients.

As PROGRAMMING TEAM LEADER you should be able to demonstrate a background in minicomputers, preferably with experience of DEC PDP operating systems and languages. Projects are carried out on a turnkey basis, and you would be totally involved from initial estimating up to installation and handover to your client and would take responsibility for the success and profitability of projects.

General conditions of employment include six-monthly salary reviews, service awards, pension, sickness and S.U.P.A. scheme, five weeks' holiday and provision of a company car.

To discuss these opportunities please contact Mike Hessian, ref. CW 284.

CPC

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SELLING MINI COMPUTERS

circa £20,000 + car

If you've got what it takes - our client can take everything you've got!

The demand for computer based Accounting and Management Information systems is continuing to grow rapidly. Computer systems are now no longer just the prerogative of the big battalions. With the introduction of the mini computer, small to medium sized companies can now enjoy many of the benefits that come from faster access to accounting and other information. In fact, it's because these benefits are so real that the market and in particular our clients share is growing so dramatically.

Our client who is London based, and fastly becoming a market leader in the mini computer/financial systems field need three more sales executives to exploit this growing demand.

Ideally, you'll be from a corporate environment with a strong commercial or financial background or have experience of selling to financial management. Thorough training will be given so you'll come to know the possibilities of the equipment backwards. And you won't be going in cold because our client is backing the exciting new launch of a new mini computer with a heavy advertising campaign in both the computer and financial press, as well as first class sales support including highly professional customer training facilities.

Mind you - this is a tough competitive business and that should give you a pretty good idea of the calibre of people our client is looking for. But with this demanding job you'll find the rewards amply match the achievement.

Basic salary ranges between £7,500 - £8,500 (Guarantees negotiable to c12K) and there's a commission scheme that makes the total package doubly interesting. Top people can earn well in excess of £17,000 a year. There's also a company car and the usual range of company fringe benefits.

CLIENT ADVISORS

Support £8,750 + car

Your job will be to liaise with the client from the time the equipment is being installed to ensure a smooth installation/implementation and hand over at which point the client will become part of the individuals client base.

Thorough training will be given on all the equipment with the possibility - if you show promise - of being able to move onto the sales side after a year.

You're most likely to have a strong financial or commercial background as most of the clients you'll be dealing with will be accountants, or commercial directors. Some experience of computer based management accounting systems would also be useful.

Basic starting salary is £8,750 and there's a company car. This is an outstanding opportunity to break into a highly competitive business.

Think you could handle it? - then ring David Wilkinson, Consultant on 01-486 5644 or write to him at the London address below.

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Ref: L/37/2

Recruitment

LOGISTIX In Informatics

PROGRAMMING & DESIGN CONSULTANTS

Benelux: Salary to £22K

A renowned international supplier of IBM compatible systems and software has requested LOGISTIX to identify and recruit several Programming and Design Consultants for its European Headquarters. Suitable candidates must offer a minimum of five years' combined experience in IBM compatible systems analysis/design, programming languages, shell/ide, assembly language, C/COBOL or PL/I, whilst applicants involving (of greater importance) must have been in the area of

Ref: L/37/A

OFFICE AUTOMATION

Greater London: Salary to £10K

A market leader in the area of office automation and information systems has an urgent requirement for Systems Programmers. Suitable candidates will be graduates with a minimum of two years' Assembler or Pascal programming experience. Those who have developed a mini-computer or micro-processor Operating System or who have had recent exposure to SNA will certainly be attractive

Ref: L/37/B

MINI SOFTWARE DEVELOPMENT

N. Home Counties: Salary to £10K

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To £10,000
 Central London based firm require experience of BASIC and communications for software support role.

6. Basic Plus

To £7,000 +
 Yorkshire based client requires programmers with BASIC PLUS experience for commercial applications.

7. Consultants

To £12,000
 London based major Software House, require 10 years' System Design and Programming experience for communications systems.

8. Real Time Programmers

£9,000
 Surrey based company requires minimum of 3 years' experience of Real Time Programming on PDPs using MACRO 11 or RT12.

CW31/

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2. Fortran Programmers

To £12,000
 West London company require programmers with FORTRAN and Numerical/Control experience.

3. Real Time Engineers

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 Cheshire based company, requires DEC, MACRO 11, FORTRAN and CORAL for Defence and Radar Systems.

4. Technical Support

£ Neg.
 London based, FORTRAN experience to provide programming support for packages.

5. Systems Engineers

To £9,000
 Shropshire based firm require minimum 4 years' experience of mini/micro based systems for military projects.

6. Coral 68

To £10,000
 London based consultancy require Real Time Programmer for micro based communications and signals project.

7. Analyst Engineers

To £8,000
 London firm require support Engineers for Software development involving mechanical/aeronautical areas.

8. Fortran Programmer

£ Neg.
 London Consultancy requires strong academic background for package design.

CW32/

1. PL/1 or Assembler

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2. PL/1

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 North London firm requires minimum 2 years' solid PL/1 experience for Real Time Telecommunications Systems.

3. DOS/VM Systems Programmer

£9,500
 City based firm require a Systems Programmer to take responsibility for the arrival of a 4341 next year.

4. OS/MVS

£10,000
 Swiss based consultancy require Systems Programmer with several years' experience.

5. Chief Programmer

£10,000
 City based installation requires experienced Programmer with MVS/COBOL and team leading expertise.

6. OS/VS1/Cobol

£6,000
 London based company with very large 3033 requires Programmer with COBOL under OS/VS1 or MVS.

7. DOS/VM Cobol

£7,500
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8. CICS

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1. Software Designers

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2. Software Engineers

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3. Real Time Programmers

£ Neg.
 West Country based company require experience of Operating Systems, and communications for advanced technology.

4. Software Engineers

To £10,000
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5. Design Engineer

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 Sussex-based firm require experience in high level languages for Aircraft Simulation.

6. Senior Engineers

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 Berkshire based, 5 years' experience plus degree. Real-time operating systems, compiler writing.

7. Micro Development

To £9,000
 Bedfordshire based firm requires Assembler and CORAL for design and development of micro based systems.

8. System X

£ Neg.
 North-West of England based firm require Engineers with Software Communications experience to work on System X.

CW34/

1. Germany
 German speaking candidates with experience of mini software or micro systems

2. Germany
 Systems Programmer in work for 3031 under DOS/VSE. 2 years' experience necessary

3. Germany
 Senior Systems Programmer in large IBM systems MVS/VSE/SNA/CICS. Munich area, yearly renewable contracts

4. Germany
 German speaking IBM COBOL programmers required to work on large IBM machine under OS. Near Frankfurt

5. France
 IBM Systems Programmers with large machine experience. Tuning MVS, performance measurement experience ideal

6. Switzerland
 Software Engineers with experience of Prolink Control to work on Real Time systems

7. Switzerland
 German speaking Technical Writer to work on Documentation for Real Time telecommunications project.

8. Switzerland
 IBM Systems Programmers with OS/VSE, CICS and preferably DL/1 for 3031 installation

CW35/

1. East London based firm require Analyst with 3 years' systems design experience Realtime Database

To £9,000

2. Surrey based position requires 2 years' Systems development experience for Production and Financial Systems

To £9,000

3. City based international bank require Analysts with Banking experience.

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4. London firm requires Analysts with at least 2 years' experience including one major system

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5. City based stockbroking firm require 3 years' experience in financial or Stock Exchange systems.

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6. Kent company require an Analyst with minimum 2 years' experience to join their small installation.

£8,250

7. Buckinghamshire firm require Senior Analyst with a programming background to take charge of User's systems.

CW36/

1. Holland
 Systems House require POP 11 Programmers to work on communications projects.

2. Holland

Amsterdam based consultancy requires Dutch speaking Software Engineers.

3. Greece

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4. Greece

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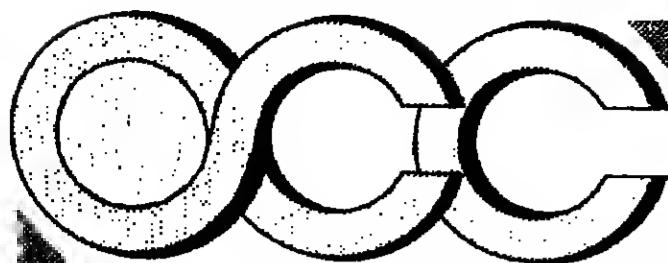
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Our client, a leading international institution, are currently seeking to expand their small but highly skilled Development Teams. They are offering a unique opportunity for candidates to become closely involved in the development of their data processing service.

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Successful applicants will be working in an English-speaking environment but a knowledge of French and/or German is helpful.

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First interviews will be held in London. Second interviews will follow shortly in Switzerland. Interested applicants should contact Karen Rizzello on 01-2429356 or write to the above address.

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All areas

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Contact: Jim Baker

Senior Systems Analysts

£11,000

A vacancy exists with a medium sized software house for an experienced analyst used to working on a variety of financial systems, to join a small but highly effective team. The work involves the translation of customer requirements into systems definition, design, and the subsequent implementation of the finished system. The appointee will have sound analytical skills, be able to demonstrate a working knowledge of on-line systems, and have a broad understanding of most facets of business systems development.

Contact: Janet Chilvers

Consultant

Information Retrieval Systems

to £10,500 + profit share

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Contact: Margaret Stevens

Consultants and Analysts

to £10,500

Herts.

The software and bureau service division of a large group wish to recruit professionals to strengthen their current project teams. Current applications include, finance, accountancy and materials control on various hardware, particularly IBM 370 under DOS/VS and PDP II in this. Applicants must have a strong COBOL background plus sound design and analytical skills in a commercial environment. A sound business acumen plus the ability to liaise at all levels, identify client problems and offer advice and expertise are essential qualities needed. The company offers loan schemes and reduced price travel to compliment the attractive basic salaries.

Contact: Brian Postles

Project Leader

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London

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Salary indicated above is commensurate with experience.

Contact: Janet Chilvers

COBOL Programmers & Senior Programmers

to £9,000 + profit share

South London

A number of positions are available for programmers with from 1 to 5 years COBOL experience, to join our client's business systems team, developing and redesigning commercial applications using on-line and database techniques. Good communicative skills are essential, while knowledge of structured programming, terminal based systems or Database techniques would be a marked advantage.

Contact: Margaret Stevens

Real-Time Systems Designers

up to £8,500

Berkshire

A small but well-established systems and computer services organisation has an opportunity for an experienced designer/programmer to join a team developing a special real-time system. Candidates should have worked for at least three years in the design and development of sophisticated real-time systems. Good programming skills are essential, while knowledge of structured programming, terminal based systems or Database techniques would be a marked advantage. Excellent career prospects and a chance to work on a variety of projects.

Contact: Jim Baker

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c. £7,500 + Car

Hertfordshire

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Ideal candidates will have a strong Icvi background preferably on VMEbus equipment, good communications software knowledge and a keenness to contribute fully in a team environment. Other relevant experience on a different hardware may be considered.

Contact: Brian Postles

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Applicants, with a professional approach to systems, should have a minimum of two years' experience as a Systems Analyst, preferably with previous programming experience. Salary is negotiable from £3,500 with a review on 1st December 1980.

Senior Programmers
Earnings Package c. £9,000

Candidates should have a minimum of two years' experience of COBOL or Assembler programming. A knowledge of Database and/or I/O systems and/or structured design techniques would be an advantage. Salary is negotiable from £7,500 with a review on 1st December 1980.

ACTION

For a detailed information package, please telephone (01-629) 1844 at any time (9am-5pm, 7/7/80) or cut out the coupon alongside and return it to Bob Whitney, Specialist Recruitment Advertising, 17 St Albans Street, London W1X 6DR.

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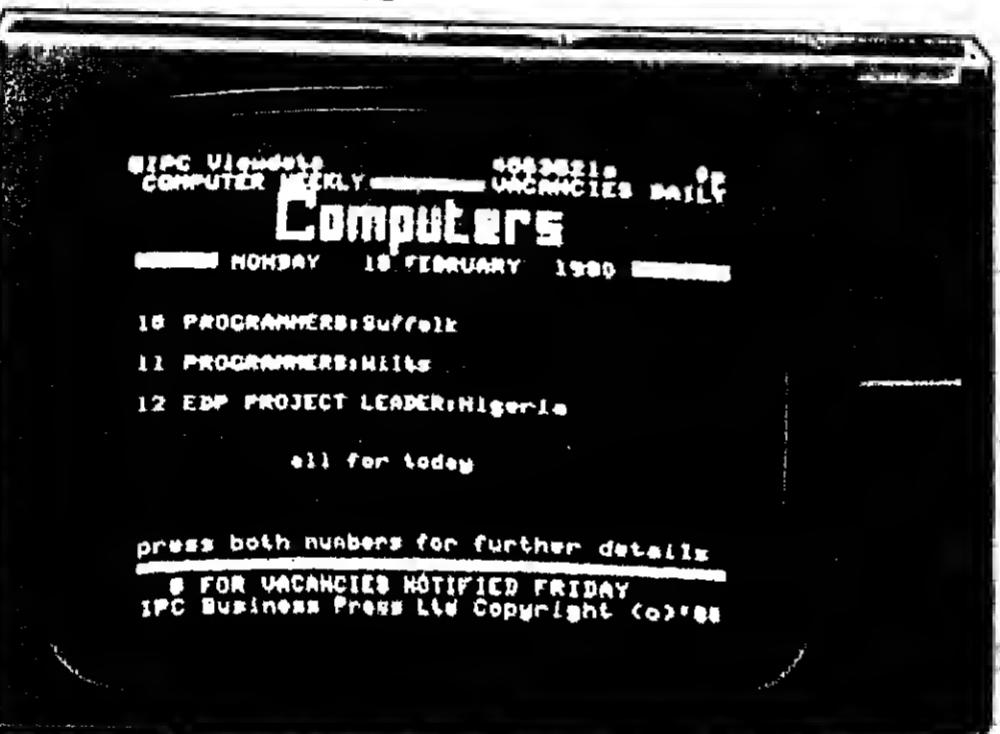
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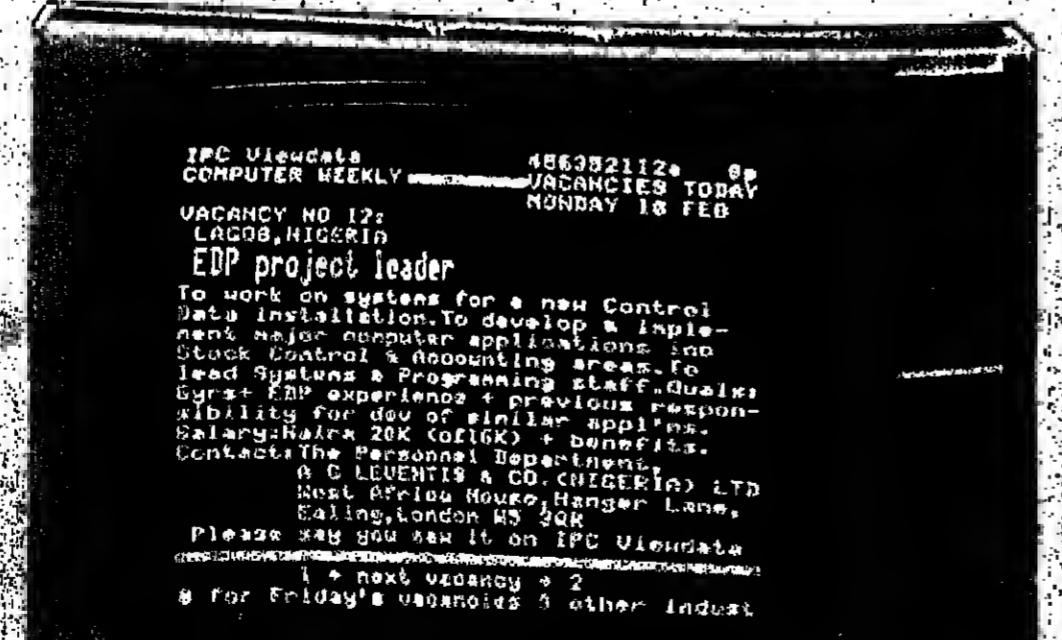
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UK & Holland

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- BASIC SOFTWARE
- REAL TIME SYSTEMS
- SCIENTIFIC PROGRAMMING

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Software Managers

HAMPSHIRE

Our Client is part of a multi-national organisation employing more than 50,000 personnel in over 50 countries and a leading figure in the development of Industrial Systems and Radar Simulation. Presently they require two Software Managers, one in the Industrial Systems Group and the other in Radar Simulation.

THE INDUSTRIAL SYSTEMS GROUP is mainly concerned with measurement and control systems for energy management in such areas as power generation, process plant, and engine test, bringing together system design, applications software project engineering and

contract management expertise required for data acquisition systems. RADAR SIMULATION UNIT is concerned with the development of digital Naval and Marine simulators ranging from large trainers employing other navigational aids to compact minimal configuration trainers.

It is imperative that candidates have sound experience in Men Management along with expertise in most aspects of Real Time Software design and development.

For further information please contact Mike or Eddie Howard or just complete the coupon.

UK & Overseas

Systems Programmers, Technical Authors

Here is an excellent opportunity for technically minded individuals with an interest in either systems programming or technical writing. A leading computer manufacturer is now recruiting additional personnel to meet the demands of a rapidly expanding section of the industry. PROGRAMMERS with a minimum of two years' technical experience will be involved in a variety of projects ranging from software design and development through to final testing and implementation prior to general release.

TECHNICAL AUTHORS with some

previous experience in the production of technical specifications and software manuals will be required to work in close association with both software design and product test teams. Applicants should be prepared to tackle and solve all manner of problems and maintain a high standard of documentation at every stage. Rapid career advancement is envisaged for those with the right background, qualities and experience.

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£20,000 + car

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Micro-Software Designers

Computer manufacturer — new development work

Germany

£18,000-£25,000

Modus has been requested to recruit a number of experienced micro designers to work on a major development project in Southern Germany for a period of at least 12 months.

A thorough knowledge of the Intel 8080 software and hardware is essential and candidates will be expected to have made a substantial contribution to at least one complete project. In broad terms, the experience base being sought is 80% software and 20% hardware, plus a tertiary qualification (minimum HNC). German is not essential.

Systems Designers and Programmers

Real-time communications systems and software development

London

£7,500-£10,000

Our client can offer excellent opportunities now for Programmers and Designers to develop a career in a field in which cost-effective and realistic solutions have gained the company a first class reputation for professional excellence and reliability. Systems being designed and implemented now incorporate VAX 11/780's and INTEL 8086's, for which much specialised software and hardware is being developed.

Candidates must have an honours degree or equivalent in a numerate discipline and have between 3 and 5 years sound experience of developing real-time systems and software. The growth of this company underlines their success and guarantees ambitious and able individuals a progressive career.

Consultants:— Mike Creemer or Andy Wright
If the advertised positions do not match your experience or aspirations, Mike and Andy are always available for a confidential discussion of the possibilities. An informal meeting — often an essential part of the process — can be quickly arranged.

International Personnel Consultants

Modus Management Services Limited
148 Watling Street, Radlett, Herts. WD7 7JH

Telephone: Radlett (09276) 3077

COMPUTER WEEKLY, September 11, 1980

Analyst/Programmers —
IMS Applications

International bank — developments leading to distributed database.

North Surrey

c £10,000 + +

This well known and highly respected international bank has radically altered its development plan to include a total commitment to a database strategy and the flexibility to go for a distributed dbms, as soon as the software is available, is even being built in.

Positions are still open for skilled and imaginative analysts/programmers with in-depth experience of designing and programming for IMS dbms systems, to join the development team. Additionally, knowledge of ADF would be extremely valuable, whilst a minimum of 3 years spent in a commercial or financial db environment is essential. Salaries are negotiable around £10K and bank benefits such as mortgage assistance and free life insurance are open to all.

Sales Executives

Software, hardware or services — all locations at all levels

UK and International

It is the ability to recognise, pursue and secure a sale that our clients are seeking. A track record of success in db sales will enable us to discuss with you several opportunities that are currently available and to mutually agree on a particular company or type of position.

Our careful and selective approach to the business of finding the correct position for our applicants will surely appeal. Call us for a confidential discussion of your requirements and career objectives.

Banking Systems Specialists

To work for a specialist city consultancy

City of London

£9,000-£15,000

Banks operate at the centre of industry and commerce and their task of keeping abreast of the latest techniques in data processing is a major and undiminished problem. Our client has established a specialist group to concentrate on providing solutions to this sector of the market.

A number of additional consultants are now required to join the company, all of whom must have in-depth experience of the banking world and be fully able to take on any role in a project context. The work offers absorbing and creative consultancy activities together with a long term rewarding career.

Programmers

Development of CICS systems on a brand new 4300 installation

Brussels

from £17,000

The Middle Eastern and European subsidiary of one of the world's largest civil engineering companies has embarked on a complete redevelopment project centred on a newly installed IBM 4300. This system is to include CICS and IDMS serving a large distributed processing network, incorporating management information and production control facilities.

These permanent career positions require staff with experience of CICS development, at command level, coupled with a thorough knowledge of COBOL. Candidates with some additional experience of FORTRAN, ASSEMBLER or PL/I will be most suitable.

If the advertised positions do not match your experience or aspirations, Mike and Andy are always available for a confidential discussion of the possibilities. An informal meeting — often an essential part of the process — can be quickly arranged.

City of Aberdeen

CITY CHAMBERLAIN'S DEPARTMENT

Computer Analyst/
Programmer

Salary scale: £5,427 to £8,586 per annum
(National Award is pending)

Applications are invited for the above superannuable post. The position is within one of two teams responsible for computer systems and offers experienced programmers the opportunity to move into systems design. Systems training will be given where appropriate. 2 x ICL 2904/50 computers are installed, one used solely for communications together with 8 x EDS04s, 1 x Train Printer, 4 x 40K Magnetic Tape Drives and communications equipment.

Working within this salary scale will be according to experience, which must include proficiency in COBOL using the housekeeping, preferably on ICL 2904 or 2903/4 Series. Experience in a communications environment will be beneficial.

Five day week, flexible working hours. (Minimum 21 days annual leave plus 11 public holidays.)

Application forms and further particulars may be obtained from the City Chamberlain, Town House, Aberdeen AB9 1AH. whom completed forms should be returned not later than September 24, 1980.

For above posts a Union Membership Agreement is required to join the Civil Service. A personal appointment will be required to join the Civil Service Union unless exemption is granted on

Computer Manager

Cardiff c. £10,000

This challenging post is created by the installation of a Honeywell L64/DPS2 in the Membership Records Department of the Royal College of Nursing. The College is both the professional organisation and trade union for nurses, with a current membership in excess of 170,000 and growing. Computerisation of membership records and subscriptions is the initial and major task, to be followed by the provision of an in-house service to other departments of the College. The computer will use a network of terminals in Cardiff and London and candidates should have a sound knowledge of communications and database techniques.

For further details and an application form, telephone or write to the Personnel Officer, Royal College of Nursing, Henrietta Place, London W1M 0AB. Tel: 01-580 2646.

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If complete artwork is supplied, 11 a.m. on a Tuesday. Ring Ray Kelly for further details on 01-261 8016.

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Continued expansion in our FINITE ELEMENT MODELLING applications market has created the challenging position of Application Sales Consultant in this area.

We are looking for a person with at least two years' sales experience either in graphics or engineering applications. He or she will be a key professional member of our FEM team, with the responsibility to create sales, aid formulation of business goals, develop and manage key accounts, and liaise with existing vendors. Strong commercial awareness and team orientation are essential.

Please send resume, in confidence, describing qualifications and career aspirations to:

Martin A. Neale, Computer Services Manager
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